



CORPORATION OF GLASGOW

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# REPORT

OF THE

# MEDICAL OFFICER OF HEALTH CITY OF GLASGOW

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1929

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THE UNIVERSITY OF CHICAGO

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## PREFACE.

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The Annual Report for 1929 will be the last to be issued in its present form. The passing of the Local Government Act and the administrative scheme which has been adopted by the Corporation will greatly enlarge the duties of the Health Committee, by whom will fall to be administered the medical services and hospitals of the Poor-Law Authorities of Glasgow and Govan, the mental institutions of the Boards of Control of these two areas, along with the scheme for the medical inspection and treatment of school children. Future reports will therefore take cognisance of these transferred responsibilities. As the Act came into force on 15th May, 1930, a full description of the scope and administration of these services properly belongs to the report to be issued next year.

A brief review of some of the more salient points in this report may be given.

*Vital Statistics.*—As regards the vital statistics of the City, the estimated population of 1,160,720 is a very tentative one, as the basis on which it is calculated, the number of persons per inhabited house as ascertained at the last census, has altered in recent years so as to make the figure used in the calculation rather uncertain. Further, the census of 1921, which was taken in June instead of in April as usual, was far from accurate as many of the population (estimated at 50,000) were then on holiday. The fact is that since the census of 1911 it has not been possible to obtain really detailed and accurate knowledge of the movements and vital statistics of the population as a whole and in the various wards of the City. The forthcoming census of 1931 will therefore be an event of great public health significance, as it will afford reliable data on such vital questions as the degree and incidence of overcrowding, and also the differential death rates in the various areas of the City, especially among children, information which it has not been possible to obtain for twenty years. A really comprehensive review of these problems is long overdue, and will become possible next year if suitable opportunity is afforded.

*Infectious Diseases.*—Among the infectious diseases pneumonia stands out prominently as a cause of sickness and death, and its

behaviour from year to year is responsible, more than any other single factor, for the fluctuations in the general death rate. In the year under review there occurred a sinister combination of fog with low temperatures associated with an epidemic of influenza, all of which were present together during January. The severity of this combination was the principal agent in raising the death rate to the high figure of 50.3 per thousand of the population during the third week of that month, and in producing a rate of 25.2 for the first quarter of the year and one of 15.3 for the whole year. The available hospital accommodation, stretched to its utmost, was unable to cope with the demand. The voluntary hospitals and those of the Poor-Law Authorities co-operated in every way possible, while the District Nursing Association gave ungrudging service in the home treatment and emergency nursing of patients in collaboration with the health visitor staff.

During this period the death rates at the extremes of life were unusually heavy, while patients with bronchitis, heart disease, and tuberculosis were ready victims. In contradistinction to this experience the rates for the remaining quarters of the year were among the lowest figures recorded. It was a fortunate circumstance that the measles epidemic, which began during the third quarter, was one of the mildest ever experienced, characterised by the low mortality of 0.69 per thousand of the population and a comparative absence of its common complication, pneumonia. Some 600 cases were treated in hospital, being about half the number admitted during an average epidemic year. The children affected during this epidemic purchased their immunity cheaply.

Prominence is given to respiratory diseases because they are the most prevalent and most fatal of the infections, and because they contribute largely to the child mortality of the City. Studies of the incidence of pneumonia in its various forms reveal no tendency to diminution. These have so far been found intractable, and there are no clearly defined principles of prevention. As regards treatment, hospital accommodation is being more and more demanded, and in the housing circumstances of the City ready admission is the only feasible course. The public health history of the City has, in fact, become largely the history of its respiratory diseases; they claim the largest share of the available hospital beds to such an extent that administration is often seriously embarrassed. A better adaptation of existing hospital facilities with increased accommodation is one of the important problems of the future. Detailed enquiries into the



incidence and spread of respiratory diseases in certain selected areas of the City are being undertaken in order to ascertain what rôle, if any, is played by housing conditions, while laboratory investigation into the types of organism present in the acute pneumonias is also proceeding in collaboration with one of the large voluntary hospitals.

*Tuberculosis.*—The death-rate from phthisis is now one quarter of the volume reached round about the year 1870, and its present rate of 0.88 per thousand of the population compares favourably with that of many other large cities much better circumstanced as regards their housing conditions. Further, the descent recorded for Glasgow began from a much higher level of incidence, Scotland's death-rate being then almost twice that of England. The rapid decline in the City is striking because its small and often overcrowded houses would appear to afford a suitable environment for an infection which is presumed to spread by close contact. The behaviour of phthisis under these conditions illustrates the powerful nature of the protective forces at work. As to what these may be, there is no unanimity. The epidemiological facts fit a number of theories. A generally accepted view is that progressive urbanisation means progressive tubercularisation resulting in a gradual acquisition of resistance, unless this is delayed by unduly low hygienic standards of life. The position of a community on the tuberculosis curve is probably the resultant of a complex series of forces, including a tendency to relatively high rates of incidence among susceptible country stocks from outside, in proportion to their number and rate of influx. The older established urbanised and well-housed elements develop an increasing degree of resistance, a process which, on the other hand, is definitely retarded among the inhabitants of slum areas. Administration, broadly speaking, proceeds on the principle of providing suitable care and treatment for the affected individual, preventing, as far as possible, massive infection of contacts by providing hospital accommodation for advanced cases on an ample scale, and improving housing and other environment. It is clear, however, that administration is being assisted by some unknown agency or agencies.

Looking at the large decline in Glasgow a little more closely, there are two very striking epidemiological features—(a) Practically no impression is being made on the death-rate from phthisis affecting young adults of either sex between 15 and 25 years of age. This type appears to have remained unaffected both in incidence and severity. (b) On the other hand, a remarkable fall in phthisis at later ages has

taken place in both sexes, most markedly so among women. These conclusions are evident from the charts prepared by Dr. J. A. Wilson for the large industrial district of the eastern area of the City, with a population of 200,000 persons, in which the deaths due to pulmonary tuberculosis since 1910 have been plotted according to the age at which symptoms of the disease first developed. They show the relative immobility of phthisis at ages 15 to 25, in contrast to the speedy reduction at younger and later ages, the rate for 35 to 45 years in women having fallen by over 50 per cent. in twenty years. Among the male population the trend in the same direction is very decided, though for older ages the rate was increased during the war years, but is now approximating to the low level for females. It would appear as if tuberculosis were rapidly declining as a chronic affection of the middle aged, but remaining unaffected as an acute affection of young adults, possibly subject to different epidemiological laws.

Non-pulmonary tuberculosis is on a somewhat different footing, as it is derived from two sources, human and bovine. Its prevention depends, as far as our present knowledge goes, on (a) control and diminution of human sources of infection, (b) elimination of bovine infection, (c) adequate and suitable means of treatment of the individual so as to reduce the incidence of crippling deformities. Sufficient provision of institutional facilities for special treatment should be an essential part of a tuberculosis scheme to allow of prompt treatment at the earliest stages. The attainment of this ideal should almost entirely eradicate crippling due to tuberculosis. This is the policy pursued in Glasgow, where, with the recent opening of Mearns Kirk Hospital for children, it will be possible to increase the existing provision of 350 beds to a total of approximately 750 beds for this purpose.

Whatever be the reason, however, the death-rates from these forms of the disease have, since the first decade of the century, declined at a more accelerated pace as compared with the rate of fall for the pulmonary form. There have been, in fact, two concurrent movements: (a) As regards mortality, tuberculous meningitis is one-third, abdominal tuberculosis one-fifth, and other forms two-fifths of the rates then prevailing. (b) Along with this, there has been noticeable a decided diminution in the severity assumed by the various forms of tuberculosis at the younger ages of life, applying particularly to glandular and abdominal disease but also to bone and joint affections, which are showing less tendency to rapid abscess formation, while amyloid disease is now seldom encountered. It is, of course, impossible to

disentangle the factors influencing these epidemiological results, but no doubt the contracting sources of human infection have contributed. It will be observed that the greatest fall has taken place in abdominal tuberculosis, a fact of considerable significance, as these are mostly bovine in origin. Although something has been accomplished under the Tuberculosis Order in eliminating grosser disease from among dairy herds, such a wholesale improvement can scarcely be credited to this cause. It appears much more likely that the greatly increased practice of pasteurisation of ordinary City milk, to which 80 to 90 per cent. of the supply has been subjected for some years, has interposed some degree of protection against transmission of this form of tuberculous infection. This is a subject which is worthy of the fullest investigation as part of the very vital question of the relation of pasteurisation of milk to the public welfare.

*Blind Persons Act.*—Considerable progress has been made, under Dr. J. L. Halliday, in the arrangements for the certification of blind persons, and, with the approval of the Joint Committee for Glasgow and the South-West of Scotland, a special clinic was opened at the end of August in the Public Health Department. This clinic is administered on a regional basis, serving a population of 2,800,000 persons. The intention is to make the clinic a certifying centre for all purposes connected with the blind, including applicants for pensions. A full description of its functions, the standards of certification, and the special arrangements whereby each applicant is examined by two specialists are given in the report.

*Child Welfare.*—The infant mortality rate has remained at the unsatisfactory figure of 107 per thousand births during the past three years. In the year under review child life was exposed to the trying experience of an epidemic of influenza associated with fog and low temperatures, a combination which finds expression in a relatively high mortality among infants and also tends to swell the causes of death comprised in the term "immaturity." Had it not been for this occurrence, the mortality rate would have been lower than last year, as there was in actual fact a reduction in mortality due to other causes, principally measles.

As regards the child welfare scheme, the most important event was the decision of the Corporation, after receiving a comprehensive report on the whole circumstances, to add to the available maternity accommodation by the provision of a municipal maternity hospital

of 100 to 150 beds on a site which has been obtained in the South-Western District of the City. In connection with antenatal consultations, it is gratifying to record a further increase in the numbers attending the various clinics, which are now held at nine centres, exclusive of the largely attended clinic at the Maternity Hospital. The total number of primary attendances at the Corporation clinics during 1929 was 2,992, compared with 2,651 during the preceding year, while 4,742 persons attended the antenatal dispensary at the Maternity Hospital, as compared with 4,431, a total increase of 652 primary attendances. It will also be noted that a special investigation is being conducted into maternal deaths in collaboration with the Department of Health for Scotland.

*Venereal Diseases.*—The treatment centres under the venereal disease scheme have all been working at full pressure during the year, and, although the actual number of new patients is slightly less than for last year, the aggregate attendances at the clinics and the number of patients found on examination not to be suffering from venereal disease are both appreciably increased. With regard to the clinics, the female treatment centre at Bellahouston Dispensary has been transferred to Govan Town Hall, while at the Maternity Hospital a centre was opened for the diagnosis and treatment of women during pregnancy on the principle that as regards such patients provision should be made for their treatment at whatever clinic the disease is detected.

On the important subject of the defaulter, Dr. R. J. Peters contributes a full and painstaking report on the causes of default, and discusses fully the various reasons which give rise to premature cessation of treatment. Hitherto figures relating to defaulting have been far from trustworthy, and the report discusses this very important and difficult subject from a variety of standpoints.

*Housing.*—Although the number of houses for which linings were granted by the Dean of Guild Court is less than the figure for last year, the rate of construction of houses, including those erected under housing schemes and by private enterprise, has reached an average figure of 5,500 over the past four years, equivalent to a population of over 22,000 persons per annum, or 90,000 for this period. These figures are, of course, exclusive of the very considerable volume of building which has been going on in areas adjoining the City boundaries. The figures show an increasing proportion of three-apartment



houses (64 per cent.) represented chiefly by the "Intermediate" type of house erected by the Corporation, and a corresponding reduction in the proportion of larger houses. This policy is designed to assist in providing houses more within the capacity of the working classes to afford, and the controlled system of letting for the purpose of relieving overcrowding in smaller houses is enabling this class of house to serve a useful public health purpose.

As far as can be judged by observation and inquiry, the housing situation has been considerably eased, although much overcrowding still obtains, often to an extreme degree, among the poorer classes. The position is complicated by relatively high rentals and the prevailing unemployment which prevents advantage being taken of such facilities as may be available. Overcrowding in one-apartment houses has apparently diminished very little since the war.

The Housing section of the report devotes considerable space to the clearance of slums and the results of rehousing. Since 1923 improvement schemes have been promoted, involving 5,110 houses, exclusive of those represented as uninhabitable in ordinary course and those condemned as dangerous by the City Engineer, for the occupants of which rehousing is also provided. During the year another scheme was submitted to the Corporation, more comprehensive than any of its predecessors, involving 1,311 houses in a single congested area in the Calton Ward. An enquiry into this scheme was held during April, 1930, by the commissioner appointed by the Department of Health for Scotland. This is an attempt at town planning in miniature. On this area of 22 acres there are 5,151 persons, with a high density of 418 persons per acre. The general death-rate in the area is 22·5 per 1,000 of the population, as compared with 17·8 for the ward and 13·8 for the City. The other mortality figures are in proportion, and illustrate the necessity for dealing comprehensively with congested areas of this kind, others of which are awaiting their turn.

As a result of these operations, a number of very unsavoury groups of houses have been swept away and their places taken by open spaces or playgrounds. Owing to the congested nature of the sites vacated, the amount of possible rehousing on the areas has been very limited, not amounting to 20 per cent. New sites for rehousing within the inner or intermediate zones of the City are becoming difficult to obtain, a circumstance which gives rise to an inevitable tendency to overbuild on the site, to the exclusion of playing-spaces for the younger children at least. It is desirable that the larger schemes should have this definite provision.

The results of rehousing are of great sociological importance, and, in accordance with custom, full descriptions are contained in the report by those entrusted with the duties of supervision. The principle adopted is to offer a new house to all families dispossessed under these improvement schemes, and from 75 to 80 per cent. accept. There are those who become weary of making an effort and leave their houses to return to the slums after a brief trial, while others are evicted. These two groups together amount to about 10 per cent. of the total. The majority of the remainder do exceptionally well, as the various descriptive reports indicate. The system of supervision of tenants has now evolved into a definite routine procedure. This is difficult and delicate work, the success of which depends on the sociological instincts, wide experience and knowledge of life possessed by those selected for this duty. There are many disappointments and difficulties, but it may be firmly asserted that the new tenants maintain a good standard of cleanliness and orderly behaviour. The benefit to the children is attested not only by official observation, but also by the headmasters of the schools to which the children have been transferred. Reports by headmasters of schools in the Eastern area of the City are included in the report, while the Chief Constable has furnished the impressions of the police superintendents of the divisions in which the new schemes are situated. These, which are incorporated in the report, furnish valuable independent testimony.

Dr. Gunn continues his extremely valuable investigations into vermin infestation of houses, which have had the effect of enabling this difficult problem to be attacked in a much more satisfactory manner.

*Bacteriological Laboratory.*—Dr. R. M. Buchanan's report shows a continued increase in the work of the laboratory, which has now reached the figure of 40,000 specimens per annum. An investigation into the infecting organisms responsible for the epidemic of influenza was undertaken, the details of which are given, while vaccine for use as a preventive was prepared in bulk for use should the epidemic continue. Its decline, however, rendered this precaution unnecessary. The routine examination of ordinary milk samples taken on arrival in the City showed that 42 per cent. were below the maximum allowed for "Certified" milk and 35 per cent. below the limit allowed for Grade "A" milk. As regards the designated milks, 97 per cent. were within the maximum bacteriological count allowed. This demonstrates the improvement which is taking place in the quality of the City's milk supply.



*Port Local Authority.*—The new and important duties thrown on the Port Local Authority under Article 28 of the International Sanitary Convention of Paris of 1926, which came into operation last year, led to a reconstitution of the staff in order to overtake more satisfactorily the work of routine deratisation of ships and the issue of the appropriate certificates which all ships must now carry. This work, which is now internationally controlled, is undoubtedly having an important effect in reducing the rat population of ships and in minimising the risk of importation of plague. In the work at the port and at the Boarding Station at Greenock, the co-operation of shipping companies, the Clyde Trust, and the Clyde Pilotage Authority is cordially given. During the year smallpox was imported by a ship from the East, bringing the severe Asiatic type. Fifteen cases were removed to hospital, while three others occurred in association with the vessel.

*Food Inspection.*—A number of additional duties have been laid on this staff. The proscription of preservatives in food is being very generally accepted, though with great reluctance in the case of sulphite preservative in mince, in respect of which numerous prosecutions have taken place for infringement of the regulations. The improving quality of the milk supply has been referred to above. Full details of the bacteriological results are given in the Chief Food Inspector's report. Under the Merchandise Marks Acts and Orders, a number of imported foodstuffs must now bear marks or labels of origin, and the provisions of the statute have been brought to the notice of traders. In one or two cases, where a practice of obliterating the marks of origin on imported eggs had sprung up, heavy penalties were inflicted. The Agricultural Produce (Grading and Marking) Act came into operation during the year, which requires registration of premises where eggs are stored. There are 1,676 dairies registered under the Milk and Dairies Act, and 618 ice cream shops.

The sale of designated milks makes very slow headway. The following average daily sales of Certified milk, 130 gallons; Grade "A" (Tuberculin Tested) milk, 940 gallons; Grade "A" milk, 445 gallons, and pasteurised milk, 670 gallons, amount to a small fraction of the consumpt of the City. As regards the general supply, however, between 80 and 90 per cent. is now pasteurised by the approved method of the holder process, while about 70 per cent. is delivered in bottles. There is no doubt that pasteurisation of milk has added to the security of cities against the danger of milk borne infections. This

is a matter of great importance, as all the outbreaks of infectious disease, whose source has been traceable to farms, have been associated with supplies delivered direct from the farm to the consumer, or have formed that portion of the supply of a particular centre of distribution not subjected to pasteurisation. How much dependence can be placed on pasteurisation in the prevention of bovine tuberculosis and to what extent bovine bacilli can survive this process are difficult questions to which answers are being eagerly sought. A review of this important question is contained in the Research Monograph of the Ministry of Agriculture and Fisheries, 1929. The results of a long series of experiments by L. J. Meanwell led to the conclusion that "Commercial pasteurisation of milk at 145° F. for 30 minutes when efficiently carried out is usually effective in destroying the tubercle bacillus, but that milk subjected to this process cannot always be guaranteed free from this organism, especially when one takes into account the fluctuations in temperature, possible mechanical defects in the plant, and the natural desire to hold the milk at as low a temperature as possible in order to conserve the cream line. These factors are all liable to be present when working under ordinary conditions."

It therefore appears that, from an experimental point of view, pasteurisation is effective in destroying tubercle bacilli in milk in proportion to the efficiency with which it is conducted. Reference has been made to the remarkable decline in incidence and severity of the non-pulmonary forms of tuberculosis. Direct evidence relating this fact to the practice of pasteurisation is difficult, if not impossible, to obtain, but it is at least significant that the fall in abdominal tuberculosis, which is regarded as due to the bovine bacillus, has since 1915 proceeded at a more accelerated pace as compared with other types of the disease.

*Air Purification.*—This ranks next to housing in the province of environmental hygiene. The direct effect of fog and low temperatures on respiratory disease was amply demonstrated during January. Effects of this kind, along with the fully demonstrated influence of smoke in depriving the inhabitants of the City of their proper share of ultra-violet rays, constitute the two most important influences of a smoky atmosphere on health and disease. Very considerable improvement has taken place in recent years, particularly in the amount of industrial pollution. The changed conditions are indicated by contrasting the years 1899 and 1900 with the present day. Out of every hundred observations of chimneys then made, an intimation

of nuisance was served in respect of seventeen; the proportion now is 1.25 per cent. The amount of black smoke then permitted was five minutes, whereas the standard now adopted is two minutes emission. The amount of soot falling on the City has been reduced by over 30 per cent., as compared with what it was in the year 1914. Factors of great assistance have been the increasing use of gas and electricity for power purposes, improvements in boiler plant, and the training of firemen. Glasgow has had the advantage of a most active Smoke Abatement League, now affiliated with the Smoke Abatement Society. Under its auspices much valuable propaganda has been undertaken. It is impossible to over estimate the effect of the firemen's classes, conducted under the auspices of the League by the Chief Smoke Inspector, which have been well attended in the past, reaching this year a record number of 110 enrolments, bringing the total to 1,057 since these classes were begun.

Progress is becoming slower, because the large factor of domestic smoke remains. From the hourly observations which have been taken by Mr. Harris, the Corporation Chemist, the relation of the pollution due to domestic smoke to domestic and industrial smoke combined may be expressed by saying that the deposit of soot falling on Sundays averages 78 per cent. of the amounts recorded from Monday to Friday. Smoke from household chimneys is thus a very real factor in atmospheric pollution. This brings into prominence alternative methods of heating, and the very important question of the more general use of smokeless fuel.

*General Sanitation.*—The reports of the Divisional Sanitary Inspectors describe a wide and increasing range of functions. The old tenement property of the City, with common sanitary conveniences, conduces to the occurrence of nuisances of various kinds, principally choked drains. The area in Calton Ward represented during the year for inclusion in a clearance scheme occupied the whole time of one sanitary inspector. The public are becoming more sensitive to smells, and many investigations were made into complaints of this kind.

Much attention is devoted to operations under the Housing Act and the issue of notices for the repair of houses. All the inspectors give the results of special enquiries into housing conditions, with special reference to overcrowding. For instance, in the South-Western area of the City, a group of streets containing 2,110 houses were surveyed and yielded the following figures. On a basis of two persons

per room, 78 per cent. of the one-apartment houses, 54 per cent. of the two-apartment houses, and 39 per cent. of the three-apartment houses were overcrowded. On a basis of three persons per room, the figures were 50 per cent., 24 per cent., and 8 per cent. respectively. This, if at all general, illustrates the difficulty of arriving at and applying reasonable standards for the prevention of overcrowding.

The clause in the new Provisional Order obtained last year for regulating tents, vans and sheds, is now in operation, with results which will become apparent later on. Considerable improvement has been effected in the dispersal of collections of vans used as dwelling houses in various parts of the City.

*Hospitals.*—The reports of the hospital superintendents are incorporated. A new observation ward is under construction at Belvidere Hospital. The three larger hospitals will have two such pavilions each, a very great advantage. At Ruchill Hospital a new "three-phase" X-ray apparatus has been installed, and radiology of the chest has been placed on a highly satisfactory footing. The value of clear undistorted photographs of the chest adds greatly to the efficiency of the tuberculosis service. A considerable amount of scientific work is being undertaken in the study of the various infections. At Belvidere Hospital studies of scarlet fever, diphtheria and pneumonia are in progress, and an account is given of the treatment of puerperal fever. At Knightswood Hospital, investigations into the organisms associated with pneumonia are in progress. At Robroyston Hospital, the reports from year to year indicate that the non-pulmonary forms of tuberculosis are being admitted at earlier stages of the disease and are more amenable to treatment, this includes ultra-violet ray therapy which has been found most beneficial for certain forms of this disease. The appointment of aural surgeons to the fever hospitals has been amply justified.

During periods when measles is prevalent in the City, cross-infection of wards creates a serious embarrassment. The use of the serum of convalescent patients for the protection of contacts has met with some degree of success. The problem of cross-infection remains a difficult and serious factor, and is a common occurrence in pneumonia wards devoted to the treatment of children. During the winter, every effort was made to avoid this by previous enquiry as to the possibility of contact of patients admitted for pneumonia with other infections,



especially measles, with the result that timely segregation was successful in preventing cross-infection in many cases. This problem is one of great difficulty, and raises important questions of the design of fever hospitals where large numbers of young patients are admitted for the treatment of pneumonia.

In this introduction I have endeavoured to discuss briefly some of the more outstanding features of public health administration by way of preface to the main contents of this report. In presenting it I desire to acknowledge the services of the various contributors. An annual report serves four purposes. It conveys to the members of the Corporation an account of the work carried out during the year. It must contain the essential information required by the Department of Health for Scotland. It forms an important and permanent record of statistical facts, whose value is often perceived when viewed in the perspective of several years' experience. Finally, it is intended to inform the public. The manner in which these purposes can best be served simultaneously is not easy to determine, and will be a source of still greater difficulty in the future.

The services of Mr. William M'Kean in connection with the preparation of much of the letterpress, the collection of information, and the general arrangement of the report, and of Mr. Ritchie for the collation of the statistical tables, should receive special mention.

The publication during the year of a book on *The Health of Glasgow, 1818-1925*, in the form of an outline by Dr. A. K. Chalmers, formerly Medical Officer of Health of Glasgow, was an event of outstanding importance. In this volume the author traces the development of the Health Department from its earliest beginnings up to the time when he relinquished office. Each of the twenty-six chapters is descriptive of the evolution of a particular branch of public health activity, commencing with a historical account of sanitation in the nineteenth century (a period noted for the rapid growth of population), the consequences of overbuilding, the occurrences of great epidemics, and, above all, the recognition of the association between disease and congested areas which led to reform in burgh administration and to the formation of a Sanitary Department. Descriptions of the conditions of these days furnish grim and unaccustomed reading to the modern student of public health. The growth of the services which fall to be administered by the City, such as tuberculosis, maternity

and child welfare, venereal diseases, &c., the incidence and methods of control of the infectious diseases, the decline in diarrhœal diseases, the epidemic affections of the central nervous system, and air purification are all discussed separately in their historical setting. It is impossible to do more than mention them. This volume will take its place as a valuable work of research into first principles, and is fully documented and annotated. It is, in fact, a treatise on Municipal Government.

A. S. M. MACGREGOR.

*Medical Officer of Health.*

PUBLIC HEALTH DEPARTMENT,  
GLASGOW, *3rd July*, 1930.



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# REPORT

OF THE

## MEDICAL OFFICER OF HEALTH

FOR THE YEAR

### 1929

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### PART I

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### SECTION I.

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#### POPULATION, &c.

The population of the City, as estimated by the Department, numbers 1,160,720 persons. This is an increase of 13,612 on the estimated population at Whitsunday, 1928, both estimates being based on the number of houses in the Valuation Roll returned by the City Assessor, and adjusted for inhabitant occupiers and farmed-out houses, which do not appear separately for valuation purposes. The Registrar General's estimate of the population for 1929 is 1,074,881, which is 85,839 less than the local estimate on which all the rates for vital statistics contained in this report are based, except where otherwise stated.

Which of these figures is the more accurate estimate on which to measure the vital statistics of the City will not be known until next year, when the decennial census takes place. This enumeration of the population will be of great importance to Glasgow, as accurate information has not been available since 1911, owing to the fact that the industrial troubles of 1921 delayed the census until June, when a considerable number of the population was on holiday. This matter has been referred to in previous reports, and the reason for taking the higher estimate explained. These divergences in the estimated population of the City have, during the present century,

led to quite marked differences in the birth-rates and death-rates and other vital statistics of the City, so that the forthcoming census will be invested with more than usual interest.

During the past two years the annual increase of the population, *i.e.*, excess of births over deaths, has been definitely less than the increase based on the number of occupied houses. The population may, therefore, be less than that on which the health statistics are being calculated, but in the diagram and table on the opposite page it would seem that the natural increase in the earlier years of the present decennium has been in fact greater than the estimated increase of the population, and that taking the average over the intervening years since 1921, the local estimate now made will not be far removed from the actual population.

The census due next year (in 1931) will also be of unusual importance because of the accurate data which will be obtained on overcrowding and the occupancy of houses generally. It will then be possible to measure the effect of the redistribution of population which has taken place since the war, and the improved standards of housing which have obtained in recent years. There is evidence that the average number of persons per house has been undergoing a gradual reduction, although the smaller houses of the City have participated least in this progress, owing to a variety of circumstances.

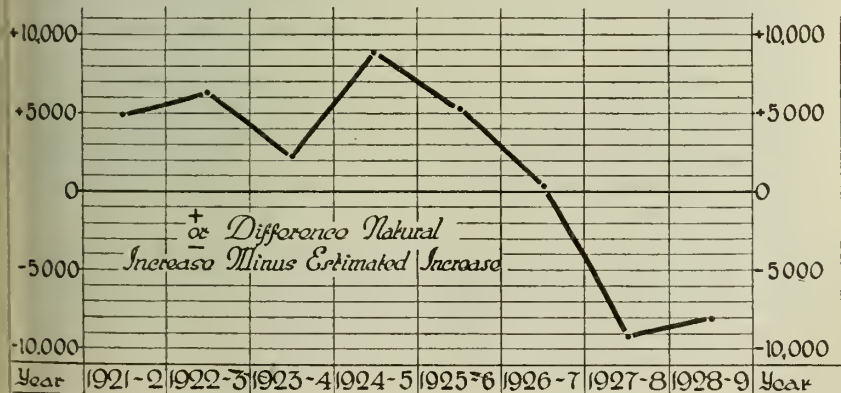
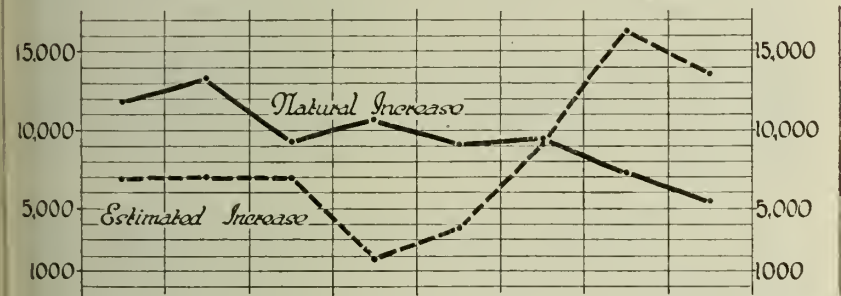
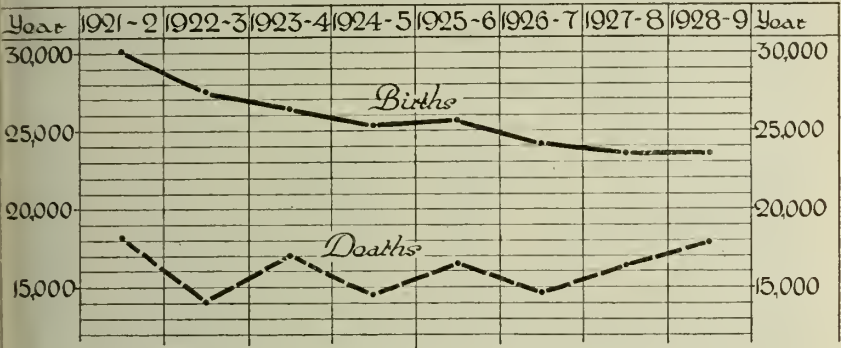
In the Annual Report of 1923 a chart was introduced showing the change which was taking place in house occupancy. The curve then indicated that a marked reduction was taking place, chiefly owing to the number and size of houses erected by the Corporation, and to the carrying out of comprehensive slum clearance and rehousing schemes.

*Ward Populations.*—The populations in the various municipal wards which are given in Table I. of the Appendix, show considerable variations, some of which may be ascribed to area, while in others the type of house is the determining feature. Wards where the artisan classes reside in tenement houses are densely populated—for example, Gorbals with 50,193 and the adjoining ward of Hutchesontown with 42,461, while Shettleston, Parkhead, Dalmarnock and Provan have all populations in excess of 40,000.

In residential wards the populations are much smaller. Langside has only 19,693 inhabitants, while Kelvinside (24,708) and Pollokshields (31,876), where many of the large residential houses are situated, now have housing schemes within their area which have added considerably to their population in recent years. Some of the other wards with small populations, such as Exchange and Blythswood, occupy the central area of the City where most of the business premises are situated.

The demolition of slum areas on the one hand and the completion of houses in Corporation schemes on the other, are responsible for most of the changes in the ward populations since the War, although

GLASGOW—CHART SHOWING DIFFERENCE BETWEEN NATURAL AND ESTIMATED INCREASE OF POPULATION SINCE 1921.





judging from the number of houses which became vacant at Whitsunday last, the pressure on housing accommodation seems to be easing somewhat. Most of the empty houses, however, are of the larger size and are not in demand. The largest increases in population occurred in Cathcart, Provan and Whiteinch in the order named, and the greatest decreases in Cowcaddens, Exchange and Dalmarnock, as shown in the following summary :—

INCREASES.				DECREASES.			
Cathcart, ... ..	...	...	5,730	Cowcaddens, ... ..	...	...	1,318
Provan, ... ..	...	...	4,056	Exchange, ... ..	...	...	1,018
Whiteinch, ... ..	...	...	3,637	Dalmarnock, ... ..	...	...	935
Ruchill, ... ..	...	...	2,973	Blythswood ... ..	...	...	852
Shettleston and Tolleross, ...	...	...	1,718	Gorbals, ... ..	...	...	756
Springburn, ... ..	...	...	1,476	Anderston, ... ..	...	...	609
Govanhill, ... ..	...	...	1,313	Townhead, ... ..	...	...	561

All the above increases have occurred in wards in which the Corporation have erected housing schemes, with the exception of Cathcart, where most of the houses have been provided by private enterprise.

*Institutional Population.*—The number resident in institutions, as ascertained by a special census at 30th June, was found to be 31,533, which shows a decrease of 832 compared with the previous year. The proportion to the total population is 2·7 per cent., as against 3·0 in 1928. There would appear to have been fewer residents in hotels, while those resident in lodging houses were also fewer; one of the lodging houses in the Central Division which had 121 residents has been closed. The inmates of one of the poorhouses were fewer by almost 200.

*Density.*—No change has taken place in the area of the City which remains at 29,511 acres, and the average density is unaltered at 39 persons per acre. The changes in the ward densities are comparatively small in the internal wards which contain mostly tenement properties, Woodside has the highest density, 221 persons per acre, in Townhead the density is 169, and in North Kelvin 163, while ten other wards have densities in excess of 100. Most of the wards with low densities are situated on the outskirts of the City and have considerable unbuilt areas.

The greatest improvement in density is shown by the reduction of seven persons per acre in Exchange and three in Townhead, Gorbals, Cowcaddens, &c. Increases of four have occurred in both Govanhill and Cathcart, and three in Provan, where a new Corporation housing scheme has recently been occupied. The ward densities are shown in Appendix Table I.

*Inhabited and Empty Houses.*—In Appendix Table II. are shown the numbers of inhabited and empty houses in each municipal ward as at Whitsunday, 1929. The following summary gives the number of unoccupied houses during recent years as compared with the pre-war year, 1913, when there were 18,710 empty houses.



# NUMBER OF UNOCCUPIED HOUSES CLASSIFIED ACCORDING TO NUMBER OF APARTMENTS.

				Old City.				Extended City.			
				1913	1921	1925	1926	1926	1927	1928	1929
One apartment,	...	...	...	4,169	33	91	79	81	48	54	125
Two apartments,	...	...	...	9,762	17	76	61	62	40	27	162
Three	„	...	...	2,731	9	28	43	45	54	33	198
Four	„	...	...	954	8	21	35	36	40	46	163
Five	„	and up,	...	1,094	76	150	190	197	277	213	477
				18,710	143	366	408	421	459	373	1,125

The increases and decreases of occupied houses in the municipal wards, shown in Appendix Table II., are mostly the direct result of Corporation activities in demolishing the slum areas and rehousing the tenants, and in providing houses for the artisan class. Instances of the former are evident in the decrease of 287 in Cowcaddens, 185 in Exchange, and 170 in Gorbals, and the increase of 900 in Provan, 645 in Ruchill, &c. The provision of houses for the artisan class is illustrated by the increase of 821 in Whiteinch, which contains the largest housing scheme erected by the Corporation. Practically the only indication of the activities of house building by private enterprise is shown by the relatively large increase of 1,391 in Cathcart ward, where several subsidised schemes are situated.

*Linings granted by the Dean of Guild Court.*—A summary of the linings granted by the Dean of Guild Court since 1915 is given in Appendix Table III. The total for the year ended 31st August, 1929, was 3,456, which is about half the number for 1928. This decrease is largely explained by the completion of the Knightswood scheme, and one or two smaller schemes in the Northern district. The number of linings granted for the erection of houses in Cathcart Ward shows that private enterprise is still active in King's Park district.

Nearly 20 per cent. of the linings were in respect of houses of two apartments, which is a considerably larger proportion than that of recent years, while the number of five-apartment houses has been reduced.

## ABSTRACT OF METEOROLOGICAL OBSERVATIONS.

The total rainfall during the year, 43 inches, is considerably less than the amount falling during each of the two preceding years, but is fully 1 inch above the average for the preceding ten years, which was 41.8. Over 20 inches, or almost half the total rainfall, fell in the last quarter of the year, while 7 inches occurred in August. Throughout the early part of the year severe drought was experienced in many parts of the country, and water supplies were exhausted or endangered. In Glasgow the total rainfall during the first half of the year was only 10.65 inches. Rain fell on 226 days, a number which is lower than any year since 1919 with 186 days. The maximum number of days on which rain fell in any month was 28 in both November and December, followed by 27 in October and August.

Apart from the long period of comparatively dry weather, the most notable feature of the year was the prolonged spell of cold

weather which began with a week of dense fog on 1st January. Low temperatures were general throughout this country and on the Continent, and the temperatures in some places were the lowest recorded for more than half a century. In Glasgow 14°F. was the lowest point reached in Springburn Park, and was recorded during February. As shown in Table IV. in the Appendix, this was lower than any reading since 1919. The average mean temperature over the year was 46.3°. The maximum, 80°, was recorded in July, and has been exceeded several times during recent years.

Bright sunshine was recorded during 1,223 hours, which is considerably higher than the records of the three preceding years. Most of the increase was recorded in the earlier part of the year, March having 114 hours compared with 43 in 1928. On the other hand, the comparison for September was less favourable, there being only 96 hours this year compared with 192 for last year.

## BLIND PERSONS ACT.

(1) *Applications for Technical Training.*—During the year 1929, 91 applications for technical training in the Glasgow Royal Blind Asylum were received. These were dealt with under the procedure outlined in the Annual Reports of 1926 and 1927. Of the applicants, 80 were considered to be blind persons and 11 were rejected. Accepted applicants from Glasgow included 33 men and 11 women; from other areas under the Joint Committee there were 32 men and 4 women.

The age distribution of the accepted candidates was as follows:—

Age.	15-20	-25	-30	-35	-40	-45	Total.
Males, ... ..	18	3	8	10	13	13	65
Females, ... ..	7	1	3	2	1	1	15

The causes of blindness in these cases are indicated below:—

<i>I. Congenital Conditions, including Cataract—</i>						
Congenital Cataract,	...	...	...	...	...	12
Retinitis Pigmentosa,	...	...	...	...	...	6
Optic Nerve Atrophy,	...	...	...	...	...	1
Aniridia,	...	...	...	...	...	1
Micro-ophthalmos,	...	...	...	...	...	1
<i>II. Infections—</i>						21
Syphilis,	...	...	...	...	...	14
Gonorrhœa,	...	...	...	...	...	8
Measles,	...	...	...	...	...	1
Meningitis,	...	...	...	...	...	1
<i>III. Injury,</i>						24
...	...	...	...	...	...	8
<i>IV. Glaucoma,</i>						1
...	...	...	...	...	...	...
<i>V. Refractive Errors,</i>						13
...	...	...	...	...	...	...
<i>VI. Cause Unknown—</i>						
Corneal Opacities,	...	...	...	...	...	3
Optic Nerve Atrophy,	...	...	...	...	...	7
Cerebral Tumour,	...	...	...	...	...	1
Phthisis Bulbi,	...	...	...	...	...	1
Iritis,	...	...	...	...	...	1
						13
						80

It is of interest to note that the proportion of these cases attributable to venereal diseases was 27·8 per cent., as against 40·7 and 37·3 per cent. of those examined in 1928 and 1927 respectively.

(2) *Admission to Register of Blind Persons*.—A clinic for the certification of applicants seeking admission to the register of blind persons was opened at the end of August in the Municipal Buildings. An account of its development and functions was given in the paper by Dr. James L. Halliday, which appeared in the *British Medical Journal* of March 8th, 1930, of which the following is an extract:—

#### CERTIFICATION OF THE BLIND—A LOCAL AUTHORITY CLINIC.

The Blind Persons Act of 1920 was designed to provide preferential treatment in education, financial assistance, and general welfare for that section of the community which suffers from major defects of vision. It defined a blind person as "a person too blind to perform any work for which eyesight is essential." Unfortunately this definition, which attempted to ensure that a fair judgement would be given on a person's capacity in relation to his environment, was often loosely interpreted. Each medical examiner has his own point of view, and persons with defective eyesight vary considerably in their capacity to undertake alternative employment, so that a medical certificate of blindness, entitling the holder to such benefits as training, subsidized employment, and a middle-age pension at 50, was often obtained by those with only minor defects.

Government circulars were issued in 1926 in England and in 1928 in Scotland, laying down a numerical standard of visual acuity for the determination of blindness. The injustices which were likely to arise from the application of this standard were pointed out at the time by Bishop Harman,<sup>1</sup> who said it was "an administrative convenience which favoured comfortable docketing," and that seemed to be the only good point in its favour. From the administrative point of view, however, the existence of some standard, even although its rigid application might cause hardship in certain instances, was an improvement on an assessment of blindness too readily determined by the caprice of individual medical examiners. The central departments requested that the numerical standard be insisted upon so far as persons desiring technical training for the blind were concerned, but no emphasis was placed on its adoption in the case of those over 50 years of age who desired to qualify for a blind pension. Suitability in this respect seemed, in most instances, to have been accepted if a register of a voluntary agency contained the name of the applicant, and the pensions department did not usually avail itself of the right to appeal against a local certificate of blindness. The lack of a uniform standard of admission to a register of blind persons caused several voluntary agencies in Scotland to appoint a consultant ophthalmologist for the examination of doubtful cases.

The Mission to the Outdoor Blind for Glasgow and South-West of Scotland was a pioneer in this respect, and in 1925, under the inspiration and guidance of Dr. A. Freeland Fergus, arrangements were made by which the majority of persons in the area who desired to be registered as blind were examined by a competent ophthalmologist.

For the purpose of administering the Blind Persons Act, Glasgow has combined with various burghs and counties of the South-West of Scotland to form a special joint committee, with the Medical Officer of Health for Glasgow as its medical adviser. On the recommendation of the report by Freeland Fergus and Halliday<sup>2</sup> this authority opened a clinic in August, 1929, to certify blind persons residing in the area under its administration. It thus continued and amplified the preliminary work done by the voluntary agency. This certifying clinic appears to be the only one of its kind.

#### NUMBER AND SOURCE OF APPLICANTS.

The names of applicants desiring admission to the blind persons' register are supplied through a variety of sources, including pensions officers, home teachers, tramways department, &c. Applications are made to the voluntary agency, which, in turn, arranges for the attendance of the applicants at the certifying clinic. On an average there are twenty fresh applicants every week. For the examination of this number experience has shown that two sessions per week are necessary. Eight to ten candidates are examined at each session, which lasts about two hours.

#### MEDICAL STAFF.

Four ophthalmic surgeons have been appointed. In order to secure a uniform standard of certification every applicant is examined by two surgeons independently, and the decision is the result of their joint opinion.

#### EXAMINATION ROOM.

The premises consist of a waiting room, a consulting room, and a room where specimens of blood can be taken for the Wassermann test. In the consulting room the apparatus is simple, and in duplicate, there being two small dark rooms, two desks with table lamps, two sets of lenses and test types.

#### STANDARD OF BLINDNESS.

The standard of blindness adopted is based on the numerical standard of visual acuity laid down by the Department of Health with regard to candidates for technical training. Records of the examination are made on a special printed form, showing details of history, previous treatment, field of vision, prognosis, &c. In practice it has been found that the most valuable test is the general bearing and behaviour of the person, taking into account the length of the period during which his vision has been defective. A malingerer may sometimes outwit numerical tests of visual acuity based on the reading of test types, but his reaction to physical obstacles, such as chairs, placed in his way, gives a truer index of his capacity for seeing. The policy of taking other factors into consideration, as was suggested by the Department of Health for Scotland with regard to trainees,<sup>3</sup> has not been found expedient. To burden a carefully considered opinion on visual acuity in relation to a numerical formula with a further opinion as to the general physical condition and intelligence of the applicant would tend to encourage a method of certification that was based on the social philosophy of the examining surgeons. In view of the difficulties of determining correctly the degree of vision, the establishment of a system of examination with joint responsibility has been fully justified. Applicants suspected of malingering, or those on the border-line, are usually asked to reappear for examination after a period varying from one to six months.



### THE FUNCTION OF THE CLINIC.

Practice has shown that the clinic cannot be regarded as a centre for treatment. It exists purely for certification. Every examination takes on an average from a quarter of an hour to half an hour. If medical, surgical, or optical treatment is required reference is given to one of the ophthalmic institutions in Glasgow.

### CO-OPERATION WITH THE VOLUNTARY AGENCY.

To assist the examining surgeon with details of employment, compensation, family history, &c., a home teacher of the voluntary agency is present at each session. The agency is informed of the results of the examination, and issues appropriate certificates to the pensions authority. In addition, it has instituted a system of following up all candidates, whether certified or not, who have been referred to it for treatment. These candidates are visited by the home teachers, who try to ensure that patients are complying with the recommendations they received.

### RECOGNITION BY THE DEPARTMENT OF HEALTH FOR SCOTLAND.

The Department of Health has taken an active interest in the initiation and development of this certifying clinic. The pensions section of the department has arranged that pensions are granted to applicants residing in the region only on condition that they have first been examined and certified at the clinic. Should any applicant appeal against an adverse decision at the clinic a copy of the joint report by the medical examiner is furnished to the department. If a further examination is considered advisable it is carried out by two medical examiners other than those who made the original one.

### HOME VISITS AND OUTLYING AREAS.

Instances arise from time to time in which an applicant for registration is unable, through physical disability, to attend the clinic. In such circumstances one of the ophthalmic surgeons visits the patient at home. The area administered by the committee contains the county of Argyllshire, and the remoter parts of this district present geographical features which make individual home visits both difficult and expensive. The Department of Health for Scotland has agreed to give special assistance to the local authority in securing the examination of candidates in these remote areas.

### REGIONAL ADMINISTRATION.

The area administered by the Local Authority for the Blind in Glasgow and South-West of Scotland has a population of approximately 2,800,000, and extends over 7,000 square miles. Regional administration of the Blind Persons Act has secured an adequate consultant service and a uniform standard of blindness throughout the area. There are approximately 3,000 names on the registers of voluntary agencies in the authority's area, but this number includes persons admitted on certificates of general practitioners.

### FUTURE DEVELOPMENTS.

It is intended to re-examine gradually all persons on the blind registers. At present, as already noted, the majority of applicants who attend the clinic are over 50 years of age, and they present themselves as candidates for pensions. Applicants for technical training are examined by the ophthalmologists to the various education authorities, but the reports of the education authorities are scrutinised on behalf of the local authority by its appointed medical adviser in order to secure a uniform standard of admission to the Blind Asylum in Glasgow. It is anticipated that, as a result of the Local Government Act, the certifying clinic will become the centre for certifying cases of blindness at all ages and for all purposes.

### SUMMARY.

1. As far as Glasgow and South-West of Scotland is concerned, the Blind Persons Act is administered on a regional basis, the area concerned having a population of 2,800,000. For this area the local

authority has established a clinic for certification only. The majority attending the clinic at present are applicants for pensions, but it is hoped that the clinic will soon become a centre for certifying all cases of blindness. Such a method of regional administration secures an adequate consultant service.

2. In the working of the clinic the closest co-operation is maintained with the voluntary agency, which undertakes, *inter alia*, a follow-up of all persons who have been recommended for treatment. This is of value as a preventive measure.

3. The Department of Health for Scotland has arranged that all applicants for pensions residing in the region must first be certified at this clinic, and special arrangements have been made for re-examining applicants who appeal against adverse decisions.

4. In order to maintain a uniform standard of certification the board system has been employed. Two ophthalmologists examine every applicant, and the decision is the result of their joint deliberation.

#### REFERENCES.

- <sup>1</sup> Harman, N. Bishop: *British Medical Journal*, 1926, i, 907.
- <sup>2</sup> Fergus, A. Freeland, and Halliday, J. L.: *An Inquiry into the Causes of Loss of Vision among the Adult Blind in Glasgow*, 1926.
- <sup>3</sup> Joint Memorandum (Scottish Education Department and Scottish Board of Health) as to Technical Training of Blind Persons, 1928.

*Work of the Certifying Clinic.*—During the four months September to December, 1929, 316 applicants for registration were examined at the clinic and 23 at their homes, giving a total of 339. Of these, 170 *i.e.*, 50 per cent., were certified as blind within the meaning of the Blind Persons Act. Seventy-four per cent. of the candidates were over fifty years of age. The number of male applicants was greater than the number of female in the proportion of ten to seven. Thus, of those certified 107 were males and 63 females, and of those refused 101 were males and 68 females.

The applicants came from the following districts:—

BURGHES.					COUNTIES.				
Airdrie,	...	...	...	14	Ayr,	...	...	...	5
Coatbridge,	...	...	...	35	Dunbarton,	...	...	...	16
Dumbarton,	...	...	...	2	Lanark,	...	...	...	47
Dumfries,	...	...	...	2	Renfrew,	...	...	...	4
Greenock,	...	...	...	19					
Hamilton,	...	...	...	10					
Johnstone,	...	...	...	1					
Motherwell,	...	...	...	13					
Paisley,	...	...	...	8					
Glasgow,	...	...	...	163					
<hr/> 267 <hr/>					<hr/> 72 <hr/>				

It will be noted that 163, *i.e.*, 48 per cent., of the applicants reside in Glasgow.

Recommendations for treatment made at the clinic were as follows :

	Cases Certified.	Cases Refused.
Medical Treatment, ... ..	12	20
Surgical Treatment, ... ..	14	17
Spectacles, ... ..	3	34
	<hr/> 29	<hr/> 71

Of the 169 applicants refused certification, 71, *i.e.*, 42 per cent., were recommended some form of treatment. Fourteen of the certified cases were recommended surgical treatment for cataract extraction.

The causes of blindness may be classified as follows:—

<i>I. Congenital Conditions, including Cataract—</i>							
Congenital Cataract, ... ..						11	
Senile Cataract, ... ..						29	
Retinitis Pigmentosa, ... ..						3	
Albinism, ... ..						2	
							45
<i>II. Infections—</i>							
Syphilis, ... ..						31	
Gonorrhœa, ... ..						6	
Trachoma, ... ..						3	
Measles, ... ..						1	
Cerebro-spinal Fever, ... ..						1	
							42
<i>III. Injury—</i>							
Casual, ... ..						7	
Industrial, ... ..						11	
							18
<i>IV. Glaucoma, ... ..</i>							
							19
<i>V. Refractive Errors, ... ..</i>							
							11
<i>VI. Causes Unknown—</i>							
Corneal Opacities, ... ..						12	
Cerebral Tumour, ... ..						2	
Optic Nerve Atrophy, ... ..						9	
Detachment of Retina, ... ..						1	
Irido-cyclitis, ... ..						8	
Phthisis Bulbi, ... ..						1	
Choroiditis, ... ..						2	
							35
							<hr/> 170

In the report by Drs. Freeland Fergus and Halliday on "The Causes of Loss of Vision among the Adult Blind in Glasgow," it was stated that venereal disease was responsible for at least 17 per cent. of the cases of blindness examined. Among the applicants examined at the Certifying Clinic 18·2 per cent. were found to have lost their vision owing to venereal disease. The correspondence between the two sets of figures is remarkable. Among applicants for training, where the age groups are chiefly those of young adult life, the percentage found is considerably higher, namely 30 to 40. The smaller



proportion found among the blind in later adult life is largely attributable to the rapid increase in glaucoma and cataract as factors in the production of blindness after the age of fifty has been reached.

### CENTRAL HEALTH LECTURES.

During the winter 1929-30 the Corporation again co-operated with the Glasgow Burgh Insurance Committee, the Scottish Committee, and the Glasgow Branch of the British Social Hygiene Council in the organisation of lectures on health subjects of interest to the public generally, and especially those interested in social welfare. The lectures were given in the M'Lellan Galleries, and on each occasion the opportunity was taken to show instructive films on health subjects. The following are the particulars of the course which 4350 persons attended.

Date. 1929.	Subject.	Lecturer.	Estimated Attendance.
21st Oct.	"Women and Health," ...	Professor Winifred C. Cullis, D.Sc.	900
19th Nov.	"The Mystery of Influenza" ...	Dr. J. L. Halliday, D.P.H.	650
10th Dec.	"Why not Prevent Venereal Disease?"	Dr. Robert Forgan, M.P.	900
1930			
21st Jan.	"On Choosing One's Parents,"	Professor F. A. E. Crew, M.D., D.Sc., Ph.D.	700
11th Feb.	"Infection and Progress," ...	Professor John R. Currie, M.D., D.P.H.	650
4th Mar.	"The Cause and Prevention of Bad Teeth,"	Dr. Scott Dow.	550
			<hr/> 4,350 <hr/>

### LEGISLATION.

During the year the following Acts of Parliament and Regulations dealing directly with Public Health, or having a bearing thereon, came into operation:—

#### ACTS OF PARLIAMENT, 1929.

##### (1) Artificial Cream Act, 1929.

The substances known as cream or artificial cream are defined; the receptacles are described; and the conditions applicable to the premises in which it is manufactured or sold are detailed.

##### (2) Local Government (Scotland) Act, 1929.

This Act transfers to county councils and to the town councils of certain burghs functions of existing local authorities relating to poor relief, lunacy and mental deficiency, education, public health, and other matters, &c.

##### (3) Widows, Orphans, and Old Age Contributory Pensions Act, 1929.

To amend Acts of 1908, 1919 and 1925.

## CIRCULARS, ORDERS, REGULATIONS, &amp;C., ISSUED DURING 1929.

*Maternity and Child Welfare.*

Circular No. 20, dated June, 1929: Memoranda to Medical Practitioners in Scotland: Maternal Mortality.

Circular No. 21, dated 10/7/29: Maternal Mortality.

Circular No. 19, dated 6/8/29: Puerperal Fever and Puerperal Pyrexia.

Order No. 587/S. 36, dated 20/7/29: Public Health (Notification of Puerperal Fever and Puerperal Pyrexia) Regulations (Scotland), 1929.

Circular No. 26, dated 28/9/29: Maternity Service and Child Welfare Scheme.

*Food and Drugs—*

Circular No. 19, dated 4/6/29: Artificial Cream Act, 1929.

Order No. 425/S. 21, dated 7/6/29: Importation of Raw Cherries.

Order No. 1010/S. 70, dated 13/11/29: Agricultural Produce (Grading and Marking) (Malt Flour and Malt Extract) (Scotland) Regs., 1929.

Order No. 1083/S. 71, dated 22/11/29: Agricultural Produce (Grading and Marking) (Ware Potatoes) (Scotland) Regulations, 1929.

Circular No. 20, 1929, dated 2/12/29: Milk (Special Designations) Order (Scotland), 1923. Double Intradermal Tuberculin Test.

*Infectious Disease—*

Circular No. 23, 1929, dated 26/11/29: Local Government (Scotland) Act, 1929. Infectious Diseases (including Tuberculosis and Venereal Disease).

*Rats and Mice —*

Order No. 1011/S. 71, dated 12/11/29: Public Health (Deratisation of Ships) Regulations (Scotland).

## SECTION II.

## VITAL STATISTICS.

The vital statistics are given in detail in respect of municipal wards, causes, sex, age, &c., in the appendix tables on pages 308 to 318, but a summary is here introduced of the principal numbers and rates for convenient comparison with those of the preceding years.

## SUMMARY.

	1927.	1928.	1929.
Population, ... ..	1,130,675	1,147,108	1,160,720
Acreage, ... ..	29,511	29,511	29,511
Persons per acre, ... ..	38	39	39
Number of Inhabited Houses,	247,519	251,307	254,594
Deaths—Number registered, ...	16,410	16,727	18,897
„ After correction for Transfers,	15,439	15,701	17,760
Births—Number registered, ...	24,020	24,187	23,301
„ After correction, ...	23,578	23,649	22,799
Death-rate per 1,000 living—			
All causes, ... ..	13·66	13·69	15·30
Birth-rate per 1,000 living, ...	20·85	20·62	19·64
Deaths under One Year—After			
correction, ... ..	2,527	2,525	2,438
Deaths under One Year—Per			
1,000 births, ... ..	107	107	107

## BIRTHS.

The births, after correction for inward and outward transfers, numbered 22,799 during 1929, compared with 23,649 during 1928, a decrease of 850. In 1929 the birth-rate per 1,000 persons was only 19·6, which is fully one per 1,000 below the rate for 1928, and is the lowest recorded rate for the City. It seems that a point may be reached in the not far distant future when, as a result of greater mortality during an unfavourable year, the births may fail to make good the loss caused by deaths. As a matter of fact, this has already

happened in certain wards of the City during recent years, and is illustrated in the following table for certain wards during 1929 :—

WARD			Death Rate per Million.	Birth Rate per million.	Excess of Death-Rate over Birth-Rate.
Kelvinside,	...	...	14,014	6,181	7,833
Park,	...	...	16,190	9,467	6,723
Camphill,	...	...	13,834	9,842	3,992

The difference is greatest in Kelvinside, where there was a decrease of almost eight for every 1,000 of the population.

The highest ward birth-rate was 28·8 in Mile-end, followed by 27·5 in Cowcaddens and 26·5 in Dalmarnock, while the lowest rates were 6·2, 9·5, and 9·8 in Kelvinside, Park, and Camphill respectively. The rate in Kelvinside would appear to be the lowest ever recorded in any municipal ward.

These and other municipal ward rates are given in Appendix Table V., which gives also the rates for the preceding year.

The following information from the Registrar-General's returns shows the birth-rates for Glasgow and Scotland since 1871 :—

Glasgow. Scotland.				Glasgow. Scotland.			
1871-1880, ...	36·6	34·9		1923, ...	25·6	22·8	
1881-1890, ...	36·5	32·4		1924, ...	24·1	21·9	
1891-1900, ...	33·7	30·3		1925, ...	24·6	21·3	
1901-1910, ...	31·2	28·4		1926, ...	23·5	20·9	
1911-1920, ...	25·7	24·2		1927, ...	22·4	19·8	
1921, ...	28·7	25·2		1928, ...	22·3	19·8	
1922, ...	27·3	23·5		1929, ...	21·2	19·0	

On the basis of local returns, the following comparison is made of the rates for several years in Glasgow and other towns :—

				1927.	1928.	1929.
Glasgow,	...	...	...	20·9	20·6	19·6
Edinburgh,	...	...	...	17·9	17·3	17·1
Dundee,	...	...	...	20·4	20·3	20·9
Aberdeen,	...	...	...	20·0	20·7	19·6
London,	...	...	...	16·1	16·2	15·8
Liverpool,	...	...	...	22·2	22·1	21·6
Manchester,	...	...	...	17·1	16·8	16·9
Birmingham,	...	...	...	17·8	17·6	17·1

### ILLEGITIMATE BIRTHS.

During the year there were 1,550 births registered as illegitimate, which is equal to 6·8 per cent. of the total births, as compared with 6·6 per cent. in 1928. Most of the wards are around the average for the City, as is shown in Appendix Table V.

A more accurate comparison of the legitimate and illegitimate birth-rates is obtained when the calculation is based on the number of females of child-bearing ages; the former on married women of 15 to 44 years of age, and the latter on the unmarried women and widows of the same ages. This is given in the following table:—

GLASGOW.—BIRTH-RATES, DISTINGUISHING LEGITIMATE AND ILLEGITIMATE IN CERTAIN YEARS FROM 1871.

(Based on figures of Registrar-General).

Year.	Number of Legitimate Births.	Rate per 1,000 Married Women 15-44 years.	Number of Illegitimate Births.	Rate per 1,000 Unmarried Women and Widows 15-44 years.
1871	17,118	298	1,749	27
1881	17,605	293	1,501	22
1891	18,304	283	1,553	21
1901	22,676	260	1,530	14
1911	19,966	229	1,603	14
1921	27,790	238	1,922	13
1922	26,565	227	1,733	12
1923	25,209	216	1,493	10
1924	23,844	204	1,486	10
1925	23,931	205	1,491	10
1926 (Old City)	22,895	196	1,450	10
1927	22,128	186	1,453	10
1928	22,075	186	1,575	11
1929	21,254	179	1,552	11

MARRIAGES.

In contrast with the very considerable reduction in the birth-rate since the beginning of the present century—fully 30 per cent.—the marriage-rate remains practically constant.

The rate for 1929, 8·5 per 1,000 persons, is slightly lower than that of the previous year, as shown in the following table giving the marriage-rates since 1871:—

GLASGOW.—MARRIAGES PER 1,000 PERSONS LIVING.

1871-1880,	...	9·1	1923,	...	...	9·6
1881-1890,	...	9·3	1924,	...	...	8·4
1891-1900,	...	9·4	1925,	...	...	8·5
1901-1910,	...	8·8	1926,	...	...	8·3
1911-1920,	...	9·7	1927,	...	...	8·5
1921,	...	10·7	1928,	...	...	8·7
1922,	...	9·1	1929,	...	...	8·5



## DEATHS.

The total number of deaths registered during the year was 18,897, which becomes 17,760 after adjustment for inward and outward transfers. The death-rate is thus 15.3 per 1,000 of the population, which compares unfavourably with the low rates of the four preceding years.

*Quarterly Death Rates.*—The death-rates vary considerably throughout the year and the increase in the mortality for 1929 was entirely due to the high death-rate, 25.2, during the first quarter of the year, when pneumonia, influenza and other respiratory diseases affected the City with great severity. This is, in fact, the highest quarterly death-rate recorded in the City since the beginning of the present century.

	1927.	1928.	1929.
1st Quarter,	14.3 { Whooping-cough prevalent.	17.1 { Measles, Whooping-cough, and Pneumonia prevalent.	25.2 { Pneumonia and Influenza prevalent.
2nd „	13.5	13.4	12.7
3rd „	11.2	11.1	10.4
4th „	15.7 { Early onset of Measles and Pneumonia.	13.1	12.9

The mortality which was mainly responsible for this high quarterly rate occurred during the last three weeks of January and the first two weeks of February, when the weekly general death-rates recorded were 29.1, 41.4, 50.3, 42.9, and 25.1 respectively. This was the consequence of the unusual spell of dense fog with low temperatures which coincided with an epidemic of influenza and a high prevalence of pneumonia. The peak death-rate of 50.3 reached at the end of January was the highest recorded since that of 53.8 in the third week of January, 1922, when the same causes were responsible.

During this period the death-rates at the extremes of life were very heavy and, apart from the respiratory causes already referred to, the deaths were also numerous from such causes as bronchitis and heart disease, and also pulmonary tuberculosis. In contrast with this experience in the early part of the year, the vital statistics of the remainder of the year were unusually satisfactory.

The death-rates during the second quarter of the year are fairly uniform, while those in the third quarter are usually low, the rate in 1929 for that period being only 10.4. In the fourth quarter the mortality again comes under the influence of respiratory and infectious diseases, especially measles and whooping cough, depending upon the recurring prevalence of these infections.

The increased mortality is more marked in some wards than in others. In Calton, for instance, the rate was 22·7, the highest in the City, compared with 19·9 for 1928, while in the contiguous ward of Mile-end, which also contains a working class population, the rate was only 16·4 compared with 18·1. The greatest increase occurred in Anderston, where the rate was 18·7 compared with 13·9 in 1928, while quite a number of wards such as Cowlares, Blythswood, North Kelvin, Kelvinside and Partick West had rates which were three per 1,000 in excess of the rates for the preceding year. The lowest ward rate was again recorded in Cathcart, where it was 10·2.

According to the Registrar-General's returns, the rates for Glasgow since 1881 have been as follows:—

GLASGOW.—ALL CAUSES—DEATH-RATE PER 1,000 LIVING.

1881-1890,	...	24·22	1924,	...	...	16·10
1891-1900,	...	21·53	1925,	...	...	14·83
1901-1910,	...	19·56	1926,	...	...	15·09
1911-1920,	...	16·36	1927,	...	...	14·63
1921,	...	15·10	1928,	...	...	14·80
1922,	...	17·20	1929,	...	...	16·53
1923,	...	14·28				

The following is a comparison of death-rates based on local returns of several large towns in Scotland and England:—

GLASGOW AND SEVERAL TOWNS—DEATH-RATE PER 1,000 LIVING.

			1927	1928	1929
<b>Glasgow,</b>	...	...	<b>13·7</b>	<b>13·7</b>	<b>15·3</b>
Edinburgh,	...	...	14·3	13·7	15·1
Dundee,	...	...	16·9	15·1	16·0
Aberdeen,	...	...	13·7	14·0	15·2
London,	...	...	12·1	12·1	14·2
Liverpool,	...	...	13·9	13·2	15·1
Manchester,	...	...	13·8	12·9	15·4
Birmingham,	...	...	11·6	10·9	13·5

*Transfer Deaths.*—The deaths on which the above rates for Glasgow are calculated include those of persons formerly resident in Glasgow, but dying in institutions or elsewhere outwith the City. On the other hand, those dying within, but with home addresses outside, are excluded. The "inward transfers" numbered 575 during 1929, compared with 565 and 569 for the two preceding years, while the "outward transfers" numbered 1,712, compared with 1,591 and 1,540. The causes of deaths in both these groups are given in Appendix Table No. VII.

## CAUSES OF DEATH.

The principal causes of death are summarised as follows:—

## SUMMARY OF DEATH-RATES PER MILLION FROM PRINCIPAL CAUSES.

	1927.	1928.	1929.
General Diseases—			
(a) Infectious,...	1,127	1,202	845
(b) Tuberculous—			
(1) Phthisis, ...	838	832	883
(2) Others, ...	301	301	284
(c) Malignant (cancer, &c.),...	1,328	1,247	1,272
Diseases of the nervous system,	1,407	1,388	1,477
Diseases of the circulatory system,	2,047	2,152	2,467
Diseases of respiration, ...	2,364	2,279	3,154
Congenital defects and malformations (including premature birth), ...	773	761	723
Violence, ...	629	578	579
All other causes, ...	2,841	2,947	3,617
All causes, ...	13,655	13,687	15,301

The death-rate from the infectious diseases in 1929 was 845 per million of the population, which is a lower rate than in any previous year. The principal decrease occurred in the rate for measles, which was only 69 compared with 328 in 1928. The mortality rate from whooping cough at 218 was also lower, the decrease being 114. There were, however, 152 deaths from meningococcal meningitis, representing a rate of 131 per million, which is more than double the rate in any of the recent years. This comparatively high mortality was associated with the greater prevalence of cerebrospinal fever, the presence of which, following an epidemic of influenza, has been noted on previous occasions.

To the severe climatic conditions obtaining in the early months of the year, already referred to, may be ascribed the higher mortality from tuberculosis, 883 per million of the population, against 832 in 1928, which was the lowest rate hitherto recorded. On the other hand, non-pulmonary forms of tuberculosis again show a decrease at 284 compared with 301.

Malignant disease has been one of the increasing causes of death over a considerable period, but the fluctuating death-rates during the past three or four years would seem to indicate that for the present at least the publicity given to the necessity for early treatment and the greater confidence in the results to be obtained from radium therapy have not been without effect. The death-rate, which was 1,272 in 1929, while higher than in 1928, is lower than the rate of 1,328 for 1927. Further particulars regarding cancer are given on page 46.

The death-rate from diseases of the nervous system, 1,477 per million, is higher than the rates for the two preceding years, but slightly lower than that for 1926. The increase here is mainly due to the higher death-rate from cerebral hæmorrhage which was 927 against 823 in 1928, a cause which is likely to have a tendency towards gradual increase with increasing average age of the population. Deaths from diseases of the circulatory system show a considerable increase, the rate for 1929, 2,467, being considerably higher than that obtaining during recent years. The cause of this sharp increase is probably to be found in the association of heart disease with respiratory conditions during the early months of the year, which has already been referred to in dealing with the quarterly death-rates. In Appendix Table VIII. the causes are shown in more detail, the deaths from heart disease alone numbering 2,387, representing a rate of 2,056 which is more than 300 in excess of the rate for 1928, and over 400 over the rate for 1927. The rates for other circulatory diseases in this group are little different from those of the preceding years.

From analyses of the weekly returns of deaths made during the first two months of the year when the severe wintry weather prevailed with very low temperatures following a week of dense fog, it was definitely established that the death-rate from diseases of respiration would be heavy for 1929. The rate for the whole year is 3,154, which compares with 2,279 in 1928. Pneumonia, which is always the most fatal cause in this group, was responsible for a rate of 2,109 against 1,570 in 1928, while the respective rates for bronchitis were 837 and 554. Influenza shows relatively the greatest increase, the death-rate in 1929 being 756 compared with 183 for the preceding year. Further reference is made to these diseases in Section V. dealing with respiratory diseases.

The number of deaths from congenital defects and malformations, including premature births, was slightly lower than that for the preceding year, the rate being 723 against 761. The reduced mortality from these causes is thus about five per cent., and is probably accounted for by the reduced number of births, in which the decrease is also five per cent.

Deaths from violence show little change, and remain at the fairly high level established in recent years, probably associated with the greater number of fatal accidents occurring. The rate for all other causes is also definitely higher and is probably due to the generally increased mortality which occurred in the early part of the year. Particulars of the other causes of death will be found in Appendix Table VIII.

#### AGE AND SEX DISTRIBUTION.

The age and sex distribution of deaths for each cause is given in Appendix Table IX. Deaths among males usually exceed those of females at almost all ages, and in the following summary it is shown that apart from the oldest age period, *i.e.*, over 75 years, the



males exceed the females with the exception of the reproductive period, 25-35. There is less disparity in the proportion of the total male to female deaths, 516 to 484 in every 1,000, when compared with the respective figures of 523 and 477 during the preceding year.

PROPORTION OF MALE AND FEMALE DEATHS PER 1,000,  
AGE PERIOD.

	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+	Total.
Males,	78	28	18	9	6	11	11	23	36	58	85	98	55	516
Females,	59	22	14	9	6	10	11	25	34	48	67	89	90	484

Of seven deaths from enteric fever, three were males and four females, which is contrary to the general pre-war experience when males predominated. There were also more female deaths due to measles in the ratio of 43 to 37, the excess occurring at younger ages, under one and under two years of age, and there were 132 deaths from whooping cough among females to 121 males. In both instances the explanation may be found in the larger proportion of female children surviving the first months of life. Deaths from scarlet fever were equal in both sexes, while male deaths were in excess for diphtheria. With regard to deaths of the central nervous system, males exceeded the females for encephalitis lethargica in the proportion of 16 to 13; but whereas this occurred at older ages, generally between 25-55, the mortality from meningococcal meningitis is distributed over a greater period, the youngest ages being affected most with 40 male to 18 female deaths under one year, while the totals are 92 males and 60 females.

The male mortality from erysipelas and pulmonary tuberculosis is again heavier than that among females.

Rheumatic fever was the cause of 26 male and 42 female deaths, only two of which were of pre-school age. The female excess appears to be mostly between the ages of 20 and 35 years. Diabetes is also more fatal to females, there being 81 deaths among females to 55 among males. The excess in this instance takes place at the older ages when women outnumber men.

Cerebral hæmorrhage was again responsible for a greater proportion of female deaths, but males are in excess in other nervous diseases. Heart disease is generally the greatest cause of death, although this year it is exceeded by pneumonia. Disease of the heart increases from birth onwards and the females slightly exceed the males; in 1929, 1,216 to 1,171. From other diseases of the circulatory system, such as arterio sclerosis, &c., the male deaths are heavier. Bronchitis is more fatal among females, 505 to 466, because of the greater number surviving at older ages, when the greatest proportion of deaths occur. Pneumonia; on the other hand, is considerably more fatal to males in the proportion of 1,405 to 1,042. Ulcer of the stomach is always more prevalent among males, the deaths this year amongst them being in the ratio of three to one among females. The mortality begins apparently about 25-35 years of age. The same disparity



is evident with regard to cirrhosis of the liver, 35 deaths occurring among males to nine among females. There is less disparity for deaths from acute and chronic nephritis, the males, however, predominating.

Suicides and other deaths from violence number 673, of which 466, or nearly two-thirds, were males.

*Cancer.*—Because of the increasing attention now being directed to the cause and prevention of cancer, a table has been introduced during the past three years, giving in detail the sex and age distribution of deaths, according to site of lesion. Comparison of the male and female deaths due to cancer of the buccal cavity is very striking, there being 57 among males and only six among females. If, as has been suggested, the disease can be caused by defective teeth, then the excess among males may be explained as being due to the masculine habit of pipe smoking. The difference in habits of the sexes may, in the same way, be the cause of the heavier mortality among males from diseases of the pharynx, œsophagus, &c.

Cancer of the genital organs and breasts, occurring almost entirely among women, is the cause of the excess mortality from the disease generally in that sex. Deaths from both these causes in females are in excess of the number occurring in the preceding year. The deaths from cancer, generally speaking, become definitely higher from 35 years upwards.

#### DEATHS FROM CANCER.

Site of Lesion.	Males.														Year
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+	Total	1923
Buccal Cavity, ... ..	—	—	—	—	—	—	—	—	1	5	23	19	9	57	75
Pharynx, (Esophagus,															
Stomach, Liver, and															
Adnexa, ... ..	—	—	—	—	—	—	—	6	18	44	91	98	26	283	254
Peritoneum, Intestines,															
and Rectum, ... ..	—	—	—	—	—	1	1	1	13	33	53	70		189	193
Genital Organs, ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Breast, ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Skin, ... ..	—	—	—	—	—	—	—	—	1	3	1	4	2	11	14
Other or Unspecified															
Organs, ... ..	—	—	2	—	—	—	1	4	10	29	52	55	16	169	154
Totals, ... ..	—	—	2	—	—	1	2	11	43	114	220	246	70	709	692
Females.															
Buccal Cavity, ... ..	—	—	—	—	—	—	—	—	—	3	1	1	1	6	6
Pharynx, (Esophagus,															
Stomach, Liver, and															
Adnexa, ... ..	—	—	—	—	—	—	—	3	14	32	63	71	22	205	232
Peritoneum, Intestines,															
and Rectum, ... ..	—	—	—	—	—	—	—	1	8	21	35	46	40	151	147
Female Genital Organs,	—	—	—	2	—	—	3	4	36	46	36	26	15	168	149
Breast, ... ..	—	—	—	—	—	—	—	1	20	29	29	26	16	121	111
Skin, ... ..	—	—	—	—	—	—	—	—	1	—	1	5	4	11	11
Other or Unspecified															
Organs, ... ..	—	—	2	1	—	—	2	1	8	24	28	24	16	106	87
Totals, ... ..	—	—	2	3	—	—	5	10	87	155	193	199	114	768	73

The ward death-rates show considerable variations, the higher rates occurring in those wards likely to have a greater proportion of older persons resident in them, while the artisan wards have usually lower rates because of the more numerous child population in them. The highest ward rate is 1,863 in Kelvinside, followed by 1,682 in Pollokshaws. The two lowest rates are 859 and 869 respectively in the contiguous wards of Cowlairst and Provan.

*Deaths in Hospitals, Nursing Homes, and other Institutions.*—Details of the deaths in Glasgow institutions are given in Appendix Table X., which shows that almost half (45 per cent.) of the total deaths registered occurred in such institutions. This high proportion is an indication of the need for institutional accommodation required for the sick. Of the total 7,804 deaths, 3,081 occurred in Poor Law institutions and 2,388 in general hospitals and infirmaries. In Local Authority hospitals there were 1,949 deaths and in nursing homes, asylums, &c., 386. Deaths from pneumonia numbered 1,332 and were more numerous than those from any other cause. Heart disease 875, all forms of tuberculosis 795, and cancer 615, were the next highest specified causes of death.

*Uncertified Deaths.*—Uncertified deaths during 1929 numbered 18, compared with 17 during 1928. Of the eight uncertified deaths under one year of age, two were illegitimate births and two were infants found in the open and of unknown parentage. In addition, there were nine inward transferred deaths noted as uncertified, four of these being classified under violence.

## SECTION III.

## MATERNITY AND CHILD WELFARE

## INFANT MORTALITY.

The infant mortality rate has remained at the unsatisfactory figure of 107 per 1,000 births during the past three years. It will be remembered that during the first quarter of the year there was an epidemic of influenza, associated with fog and low temperatures, a combination which resulted in a relatively high mortality among infants, and also tended to swell the causes of death comprised in the term "immaturity." The proportion of still-births was also increased. The effect of this was to conceal reductions which took place in respect of certain other causes, such as a fall in mortality due to digestive diseases and infectious diseases. As will be seen later, the influence of respiratory infection was felt in almost all the wards of the City.

The number of deaths of infants under one year during 1929 was 2,438, compared with 2,525 during the preceding year. The deaths under one year in each Municipal Ward of the City during 1929, with the relative rates per 1,000 births, are contained in Appendix Table XII., with a comparison of the rates during the two preceding years.

The following tables show (1) the infant death-rates in Glasgow since 1891; (2) the rates in other large towns; and (3) the death-rates among legitimate and illegitimate children per 1,000 births in each group.

## GLASGOW—INFANT DEATH-RATE DURING SEVERAL PERIODS.

		Per 1,000.		Per 1,000.	
Average of 10 years,	1891-1900,	149	1926, ...	...	104
„ 10 „	1901-1910,	135	1927, ...	...	107
„ 5 „	1911-1915,	134	1928, ...	...	107
„ 5 „	1916-1920,	115	1929, ...	...	107
„ 5 „	1921-1925,	107			

## COMPARISON WITH SEVERAL LARGE TOWNS.

				1927.	1928.	1929.
<b>GLASGOW,</b>	...	...	...	<b>107</b>	<b>107</b>	<b>107</b>
Edinburgh,	...	...	...	80	75	80
Dundee,	...	...	...	138	102	102
Aberdeen,	...	...	...	105	94	95
London,	...	...	...	59	67	71
Liverpool,	...	...	...	94	94	96
Manchester,	...	...	...	86	91	97
Birmingham,	...	...	...	75	65	79

GLASGOW.—DEATH-RATE PER 1,000 LEGITIMATE AND  
ILLEGITIMATE BIRTHS.

	Legitimate.	Illegitimate.		Legitimate.	Illegitimate.
1899-1900, ...	144	286	1923 ...	85	163
1901-1910, ...	126	257	1924, ...	115	182
1911-1915, ...	127	217	1925, ...	99	157
1916-1920, ...	110	175	1926, ...	101	157
1921, ...	102	163	1927, ...	105	147
1922, ...	116	181	1928, ...	102	176
			1929, ...	103	165

There were 1,387 deaths of male infants and 1,051 deaths of female children during the year, compared with 1,458 and 1,067 respectively for the previous year. The infant mortality rate for males was 118 and for females 95, while the ratio of male deaths to 100 female deaths was somewhat lower at 122, compared with 129 for 1928. This difference between male and female rates is a constant feature of infant mortality.

*Causes of Infant Mortality.*—The causes of infant deaths according to sexes and for each month during the first year of life are given in Appendix Tables XIII. and XIV. About 36 per cent. of the male deaths and 34 per cent. of the female deaths occurred in the first month of life. Nearly half of these early deaths are due to premature births.

As is shown in the summary of the totals of the principal groups of causes of infant death in Tables XIII. and XIV., which is given below, with a comparison for previous years since 1916, the death-rate from causes in the immaturity group has shown little reduction, the rate varying in the case of males from 36 to 46 and of females from 27 to 37.

CAUSES OF DEATH.		Rate per 1,000 Births.										
		1916-20	1921	1922	1923	1924	1925	1926	1927	1928	1929	
<b>MALES—</b>												
I. Immaturity, ...	...	46	41	40	36	42	41	44	39	45	45	
II. Diseases of Respiratory System, ...	...	27	22	43	20	39	30	29	36	28	35	
III. Diseases of Digestive System, ...	...	18	21	12	12	14	15	15	17	17	14	
IV. Diseases of Nervous System, ...	...	8	7	7	7	6	8	8	6	7	6	
V. Tuberculous Diseases, ...	...	3	3	2	3	3	2	2	1	2	1	
VI. Infectious Diseases, ...	...	11	14	17	13	17	13	11	14	15	9	
VII. Suffocation, ...	...	—	—	1	—	—	—	—	1	—	—	
VIII. All other causes, ...	...	10	9	12	8	9	9	9	5	7	8	
All causes, ...	...	123	117	134	99	130	118	118	119	120	118	
<b>FEMALES—</b>												
I. Immaturity, ...	...	36	36	34	31	31	27	29	37	33	34	
II. Diseases of Respiratory System, ...	...	21	16	29	16	29	20	23	24	23	27	
III. Diseases of Digestive System, ...	...	14	15	9	8	11	10	13	10	11	10	
IV. Diseases of Nervous System, ...	...	6	5	5	4	5	4	4	4	4	5	
V. Tuberculous Diseases, ...	...	3	2	2	2	1	1	1	1	2	2	
VI. Infectious Diseases, ...	...	11	12	16	12	17	14	10	14	14	10	
VII. Suffocation, ...	...	—	—	1	—	1	1	1	—	1	—	
VIII. All other causes, ...	...	9	6	9	6	9	6	7	5	5	7	
All causes, ...	...	100	92	105	79	104	83	88	95	93	95	
Ratio—Males to 100 Females, ...	...	123	127	127	125	125	142	134	125	129	122	

Diseases of the respiratory system are the principal of the three important groups which determine the variations in infant mortality from year to year. As was demonstrated in the report for 1927, respiratory, digestive and infectious diseases are the main causes which determine the differences in infant mortality as between good and bad districts. In 1929 the respiratory mortality was 35 for males and 27 for females per 1,000 births. These rates are seven and four per 1,000 births respectively in excess of those for 1928

The death-rate from diseases of the digestive system was lower in both sexes than the respective rates in 1928, that for males being 14 against 17, and the rate for females 10 against 11. Diarrhoea forms 85 to 90 per cent. of the deaths in this group. This affection took at one time a rather heavy toll of infant life.

There is a reduction in the male death-rate from seven to six, and among females an increase of from four to five from diseases of the nervous system, while tuberculous diseases were less fatal among males during 1929. The most satisfactory feature of the 1929 infant mortality is the low death-rate for infectious diseases, nine for males and ten for females, compared with the respective rates of 15 and 14 during the preceding year; these mortalities, in fact, are the lowest on record in Glasgow. Although measles was practically absent as a cause of infant mortality, whooping-cough, which has maintained a continued subdued prevalence during the past two or three years, was responsible for the greatest number of deaths in this group. There was also a relatively heavy mortality from meningococcal meningitis because of the comparatively marked increase of cerebro-spinal fever during the year. There were 40 male and 18 female deaths from this cause, while for whooping-cough the comparison is reversed with 47 males to 67 females.

*Infant Mortality in Wards.*—This year the highest ward mortality apart from Blythswood, in which are situated several homes of a special nature, is 150 per 1,000 births in Calton, a district which has a considerable amount of old, and for the most part uninhabitable, property, which will be dealt with in a slum clearance and rehousing scheme now under preparation. There is a decided improvement in the Mile-end rate of 111 compared with 157 for 1928, a ward which has for a number of years had a high infant mortality. The rate in Gorbals was 136 and in Govan 128, while 125 was the rate in Springburn, Anderston, and Kinning Park.

There were few very low rates, which would seem to indicate that the severe weather conditions already referred to were not without effect on the infant mortality of most of the wards in the City. In Pollokshields the rate was 86 against 48; in Cathcart 56 against 37; and in Park 92 against 63. The rate in Langside was lower at 47 compared with 51 in 1928.



## CHILD WELFARE SCHEME.

A new centre was opened in Pollokshaws during the year, where, as a temporary measure, consultations are held in rooms in Pollokshaws Burgh Halls. The proposed clinic in Anderston district, which was described in the report last year, was authorised by the Department of Health, and it is expected that the erection of the building will shortly commence.

The provision of additional maternity services has been under discussion by the Child Welfare Committee on frequent occasions, and a report on the whole question was submitted during the year. The Corporation decided to augment the Hospital accommodation by the erection of a maternity hospital of between 100 and 150 beds. A suitable site of about 12 acres in extent, situated in Langlands Road, Govan, was obtained from the Housing Committee, and plans are now in course of preparation. The report is as follows:—

REPORT BY THE MEDICAL OFFICER OF HEALTH ON:—  
(1) MATERNITY HOSPITAL ACCOMMODATION, (2) OUTDOOR MATERNITY SERVICE, AND (3) CONVALESCENT HOMES.

The following report has been prepared in accordance with a remit of the Sub-Committee on Child Welfare approved by the Corporation on 10th January “that, with a view to the establishing of a complete municipal maternity service, the Medical Officer of Health be directed to prepare a report on the need for (1) a municipal maternity hospital, (2) an outdoor staff of municipal nurses and medical officers, and (3) municipal maternity convalescent homes.”

## I. MATERNITY HOSPITAL PROVISION.

The question of maternity hospital accommodation was under consideration some years ago in connection with a proposal to erect small maternity homes at Shettleston and Maryhill. The minute of the sub-committee of 6th August, 1923 (Print No. 22, page 2,045), records the view of the Scottish Board of Health, in a letter of 21st July, that “while the Board are at the moment not in a position to commit themselves to the giving of grant, they will, on receipt of specific proposals for additional provision for maternity cases in the City, give the matter their most careful consideration, and that the Board consider that the provision of maternity homes will be of greater advantage in realising the objects of the Maternity and Child Welfare Scheme for the City than the provision of day nurseries under present conditions.” On 16th June, 1925, a report was submitted to the Sub-Committee on Maternity and Child Welfare, reviewing the policy of establishing small maternity homes in different localities. It was pointed out that the provision of scattered homes throughout the City in preference to a larger institution, more centralised in its services, would not be worth the relatively greater expenditure in-

volved, and that the balance as regards efficiency and economy lay with the larger institution. As regards such future provision as may be required in Glasgow, the arguments are still convincingly in favour of adherence to this general principle.

The Committee on Health on 14th October, 1925, decided not to pursue further the question of a municipal maternity hospital; this has now been reopened by the foregoing remit.

*Existing Accommodation in the City.*—The facilities available for maternity purposes may be set out under two heads:—(a) the number of births reported as taking place in institutions, and (b) the number and type of beds available in hospitals and homes.

(a) The births occurring in institutions during 1927 are shown in the following table, which groups them roughly into the four types of institution, maternity hospitals, poor-law hospitals, private nursing and maternity homes, and general hospitals:—

			City Cases.	Outwith City.	Total.
Maternity Hospitals,	...	...	2,655	270	2,925
Poor-Law Hospitals,	...	...	954	15	969
Maternity Homes,	...	...	273	125	398
General Hospitals,	...	...	133	35	168
			4,015	445	4,460

The table shows that 10 per cent. of the patients confined in institutions came from outwith the City. The number of births which took place in Glasgow during 1927 was 24,882, of which 4,015, or approximately 20 per cent., occurred in institutions as above.

(b) The accommodation at present available in the City, whether for antenatal, normal, or abnormal cases, is provided by the Glasgow Royal Maternity Hospital (which does much the largest share of this work), the Govan Cottage Hospital, the poor-law hospitals, and various private nursing and lying-in homes. Omitting the two last named groups, in which 273 and 133 births, respectively, took place, and whose accommodation is a variable quantity, the number of beds in the voluntary and poor-law institutions may be expressed as follows:—

			Maternity.	Antenatal.	Total.	
Royal Maternity Hospital	...	...	114	25	139	{ About to be increased by 30 beds.
Govan Cottage Hospital,	...	...	20	—	20	
<i>Glasgow Parish—</i>						
Stobhill Hospital,	...	...	38	20	58	
Eastern District Hospital,	...	...	16	—	16	
Western District Hospital,	...	...	16	—	16	
<i>Govan Parish—</i>						
Southern General Hospital,	...	...	5	—	5	(variable)
			209	45	254	

Thus, as regards voluntary and poor-law institutions, the accommodation for maternity patients in Glasgow is approximately 254 beds, of which 45 are devoted to antenatal treatment. The beds at Stobhill are utilised in conjunction with the Maternity Hospital, by an arrangement made between the Directors of the hospital and the Glasgow Parish Council, in order to relieve the pressure on the Maternity Hospital. The beds so occupied are retained and financed by the Maternity Hospital. Under this arrangement there took place in Stobhill Hospital, in 1926, 516 births, in 1927, 330 births, and in 1928, 527 births.

*Accommodation in Relation to Function.*—Maternity patients may be roughly classified into abnormal and normal, the former category comprising difficulties and accidents incidental to pregnancy and labour, admitted chiefly as emergency patients either to the antenatal or obstetric wards. The Maternity Hospital deals with the largest proportion of this important group, which, for the year 1927, composed 60·1 per cent. of the admissions. The demand on its accommodation is such that it is occupied in excess of its normal complement. The Medical Report for 1927 states that “there is practically always a considerable number of extra beds in use, so that the average number of patients in residence is well in excess of the normal.” The average number of patients in residence was 134 in 1926 and 129 in 1927, on the obstetric side, which has accommodation for 114 beds, while the antenatal wards are almost continuously occupied in excess of their allotted number of 25 beds.

*Deficiency of Accommodation.*—The foregoing data indicate the difficulties encountered by the Maternity Hospital in pursuance of its policy of not refusing admission to any woman actually in labour, a policy becoming more difficult and, in fact, almost impossible to apply owing to the increasing demand for institutional facilities and to the growth of the population. The Poor Law Authorities, by setting aside beds for maternity purposes, have to some extent helped the situation, but the available accommodation is not sufficient to permit of the admission of patients unless they are actually in labour and the confinement imminent. Under present circumstances it would not appear to be possible to depart from this rule, and its strict observance as a criterion of admission gives rise to considerable difficulty, if not to actual hardship, especially as regards cases coming from a distance. There is evidence that women, knowing that they will not be admitted before labour has commenced, are afraid to go to hospital after it has commenced, and the question of transport and distance becomes then a material consideration. From enquiries made there is no doubt that a considerable number of women would avail themselves of institutional facilities were it not for fear of undertaking the journey after labour has commenced, or of risking refusal of admission.

In a memorandum submitted by representatives of the Glasgow Obstetrical Society at a conference with the Committee on Child Welfare in September, 1925, the following views were expressed on this subject:—

“ We believe that the hospital accommodation for maternity cases in the City of Glasgow is totally inadequate. The Royal Maternity Hospital serves not only the City of Glasgow, but receives complicated maternity cases from all over the West of Scotland. In recent years small local hospitals have been established by various burgh and county authorities, such as Airdrie, Paisley, Motherwell, Lanarkshire and Ayrshire, under Maternity and Child Welfare Schemes. In spite of the relief thus afforded, the Royal Maternity Hospital has been compelled, since May, 1925, to try to relieve its overcrowding by arranging for the reservation of auxiliary maternity beds at Stobhill Hospital. Probably for the first time in the 92 years of its history, the Maternity Hospital has been unable to take into its own wards women in labour applying for admission.

“ There are three types of cases for which hospital accommodation requires to be provided. These are:—

- “ (1) The cases in which the onset of certain diseases peculiar to pregnancy, or the complication of such conditions as heart or kidney disease by pregnancy, make hospital treatment necessary during the course of pregnancy.
- “ (2) Those cases in which abnormalities in the course of labour, either foreseen during pregnancy at an antenatal centre, and so allowing the patient to be in hospital before the onset of labour, or identified for the first time after labour has commenced in the patient's own home and requiring the patient's transfer to hospital. There is a certain number of cases which might be included under this category, in which the possibility of such complications makes it advisable to have the patient in hospital before the onset of labour, but where fortunately the course of labour runs normally.
- “ (3) The patients in whom pregnancy and labour not only seem likely to, but do also turn out to be quite normal. The fact that such patients desire hospital treatment is only partly due to the shortage of houses. There is developing everywhere a desire among pregnant women to have hospital treatment during their labours. This committee believes that this is an excellent thing for women, and affords the surest of all ways of improving the results of midwifery practice.”

The general problem of maternity accommodation was considered by the Hospital Services (Scotland) Committee (Lord Mackenzie's Committee), 1926, and was also referred to by the Committee on



Puerperal Morbidity and Mortality in Scotland. From the report of the former body the following may be quoted:—

Paragraph 30.—“The Committee on Puerperal Morbidity and Mortality in Scotland reported in 1924 that ‘the maternity hospital provision is not adequate for the number requiring admission, and that especially in its facilities for antenatal care and teaching it is seriously deficient.’ The evidence we have gathered confirms this conclusion. . . . The pressure under which the Glasgow Maternity Hospital works is typical. . . . There is evidence that the authorities of the Maternity Hospitals are forced to discharge patients sometimes dangerously soon after confinement.”

After discussing the position and estimating that the shortage amounted to 600 beds in Scotland, the committee observed:—Paragraph 106—“We think that the local authorities, under their schemes of maternity and child welfare, might reasonably be expected to provide a portion, if not all, of the additional beds that are needed for maternity.”

*The Position in Glasgow.*—There is no doubt that there exists a deficiency of indoor accommodation in Glasgow; the demand for increased hospital provision for normal confinements is spreading among all classes. It is extremely difficult to formulate any estimate, because a service of this kind depends on many considerations, such as prompt admission of difficult and abnormal cases, bad housing conditions on the one hand, and questions of convenience, home or social circumstances or desire on the other hand. Nevertheless, on purely medical grounds reasonable provision of indoor facilities for antenatal treatment, difficult cases and the badly housed, is an important element in securing a competent midwifery service, calculated to lessen mortality and prevent gynaecological complications, which are so frequent a sequel of pregnancy.

An effort has been made to ascertain the circumstances under which childbirth takes place in the City, and the following paragraphs give some of the results elicited.

*Enquiry into Conditions associated with Confinements.*—Data, referable to the year 1926, have been collected and analysed. For this purpose a group of 2,000 births was taken, equal to 8·2 per cent. of the total births (24,345) which took place during that year. In order to make the sample illustrative of the conditions prevailing throughout the City, these 2,000 births were distributed throughout the municipal wards *pro rata* to the births recorded in each ward during 1926, and a consecutive series selected for analysis by working backwards from 31st December of that year. As there is no similar information available in respect of medically attended births, the records analysed refer only to non-medically attended births and to those occurring in institutions, *i.e.*, 57 per cent. of the whole, a figure which varies from 4 per cent. in Kelvinside to 68 per cent. in Dalarnock Ward.



Keeping in mind that these 2,000 births exclude those which were medically attended at home, the principal facts disclosed by the survey are given.

(1) *Place of Confinement*.—The proportion of these patients delivered in institutions was 22·2 per cent. (444); 18·7 per cent. were attended by outdoor nurses of the Maternity Hospital or other agency, and 59·1 per cent. by midwives. These proportions are practically the same as those for the non-medically attended births in the City as a whole.

(2) *Housing Conditions*.—Information was available as to housing conditions in respect of 1,556 births. This is summarised as follows:—

	1 apart.	2 aparts.	3 aparts.	4 aparts.	5 aparts.	6 aparts.	Not stated.	Total.
Total number of Births, ...	616	812	89	18	3	2	16	1,556
Number occurring in Houses with more than 3 persons per Room, ...	469	337	14	3	1	—	—	824
Percentage, ...	76·1	41·5	15·7	—	—	—	—	53·0

This degree of overcrowding, on the basis of three persons per room, *i.e.*, 53 per cent., is almost double the proportion for the City as a whole, but it must be remembered that this survey deals with part of a restricted sample of non-medically attended births, and is, therefore, representative of the poorer groups of the population, as evidenced by the high proportion of births belonging to this category in the poorer wards.

The outstanding fact is that in very many cases a degree of privacy is not possible of attainment, except by crowding the family into the rest of the house or by sending them out.

In order to ascertain whether overcrowding was a factor influencing admission to hospital under present circumstances, an analysis of the group of 444 cases, where the birth took place in hospital, gave the following result:—

PERCENTAGE IN EACH GROUP OVERCROWDED ON THE BASIS OF  
THREE PERSONS PER ROOM.

	Home Cases.	Hospital Cases.	Total Sample.	Whole City.
1 apartment, ...	76·1	53·1	70·9	59·6
2 apartments, ...	41·5	35·2	40·3	35·3
3       "       ...	15·7	8·8	13·8	7·6
4       "       and up, ...	17·4	—	15·4	1·1
	53·0	37·8	49·6	28·0

While the proportion of overcrowding in the total sample is almost 50 per cent. as against 28 per cent. for the City, it has to be borne in mind that the sample contains relatively few births in houses of

four apartments and upwards, as such cases will usually be taken into hospital only when abnormal conditions exist, and even then not to the same extent as from smaller houses.

The close agreement between the proportions dealt with in hospital and the overcrowding in the City as a whole, seems to suggest that removal to hospital is determined mainly by conditions other than overcrowding. These may be economic or, more likely, the presence of some abnormal condition. Were overcrowding a particular cause for removal, then the proportions in the hospital group ought at least to have been as high as in the home group. It is probably a fair inference that the higher proportion of births occurring under overcrowded conditions in the home cases has a direct correlation with the higher birth-rate generally prevailing among the poorer classes of the community.

(3) *Reasons for Admission.*—It was not possible to ascertain, with any degree of accuracy, the presence or absence of abnormal conditions in the cases delivered at home. As regards the 342 confinements dealt with in the Maternity Hospital and elsewhere, 40 per cent. are recorded as showing some abnormal condition. The remainder (205) were apparently normal, so that admission was for some non-medical reason, although, no doubt, some cases would prove abnormal after admission. It was obvious, however, from the reasons given and the conditions found that admission to hospital was due to very pressing economic or social circumstances, such as unemployment, living in lodgings, admission from “homes,” &c.

(4) *Relation to Insurance Act.*—The great majority were in receipt of maternity benefit under the National Insurance Act, as follows:—

Payment made and amount stated, ... ..	445
Payment made, but amount not given, ... ..	985
Payment expected, but not yet made, ... ..	80
	<hr/>
	1,510
No payment, ... ..	212
No information, ... ..	278
	<hr/>
	2,000
	<hr/>

Normal maternity benefit is 40s., although 50s. may be paid under schemes of additional benefit. It may be pointed out that under the regulations governing the operation of the Insurance Act suspension from maternity benefit only rarely occurs, notwithstanding prolonged unemployment; thus, in the great majority of these confinements maternity benefit was actually paid or expected. The demand for institutional accommodation cannot, therefore, be ascribed to failure to receive maternity benefit. It may be here pointed out that the Royal Commission on the National Insurance Acts recommended, a few years ago, an increase in maternity benefit to £3 5s., payable to

the extent of 20s. in cash and the balance in fees to the midwife and the medical attendant, with provision of a further fee of 10s. 6d. for antenatal attendance.

(5) *Charges for Treatment.*—As regards the Maternity Hospital, where maternity benefit is payable, the usual charge is 15s. for outdoor cases and 20s. for indoor cases, subject to modification in special circumstances. From figures supplied by the Maternity Hospital, the average payment per birth for the year 1926 was 14s. 3½d. over 2,995 births. Assuming that the average payment received for indoor cases, where payment is made, is the standard 20s., then the amount received during the year 1926 would represent 2,141 cases out of 2,995; in other words, payment is made in 72 per cent. of the cases admitted, *i.e.*, in about three out of every four cases dealt with. In registered maternity homes the average cost of confinement is about four guineas per week. The minimum charge is three guineas per week for the lying-in period, with thirty shillings per week for the waiting period.

*The Normal Maternity Case.*—In discussing provision for indoor maternity patients, a clear distinction should be made between a preventive medical service on the one hand and a purely social service, on the other hand. On the medical side, the existing facilities are insufficient to allow free admission to treatment of abnormal antenatal patients, of abnormal midwifery cases, and of the badly housed. On the social side, it is impossible to measure the demand for institutional facilities which might develop on the grounds of social convenience. Consequently, institutions which cater for maternity patients, whether voluntary or municipal, where expectant mothers make arrangements beforehand for their confinement to take place in an institution, usually require that a payment be made for the service rendered.

*Powers of a Local Authority.*—The responsibility of the Local Authority to provide such accommodation is at present governed by the regulations under which the Government grant-in-aid of maternity and child welfare schemes is made, and under which it is authorised that hospital treatment may be provided for complicated cases of confinement or complications arising after parturition, or for cases in which women to be confined suffer from illness or deformity, or for cases of women who, in the opinion of the Medical Officer of Health, cannot with safety be confined in their own homes, or such other provision for securing proper conditions for the confinement of necessitous women as may be approved by the Medical Officer of Health. It would thus appear that, subject to the approval of the Department of Health, a Local Authority is authorised to make institutional provision in respect of the various groups of parturient women referred to in the preceding pages.

In the new clause which has been inserted, at the instance of the Corporation, in the Local Government (Scotland) Bill, at present before Parliament, a Local Authority is empowered, under certain conditions, to provide and maintain hospitals for sick persons in addition to the powers contained in the Public Health Act in respect of infectious diseases; for the purposes of the clause "institution" is defined to include maternity homes. The clause also carries with it the duty to recover the cost of treatment in whole or in part.

*Summary.*—(1) On the antenatal side, while the existing facilities may be sufficient for the graver conditions, there is a deficiency of accommodation for expectant mothers where indoor treatment would be distinctly beneficial to mother and child. This is becoming more obvious as the antenatal service develops.

(2) On the obstetric side an expansion of facilities would greatly relieve the pressure under which the Maternity Hospital carries on its work. It is unable to admit patients until labour has definitely commenced, a criterion which effectually debar applications. Additional accommodation would permit of the admission of less serious complications and of others in whom obstetric difficulties might be anticipated to occur, and would also allow arrangements for admission to be made prior to the actual onset of labour.

(3) There remains the normal case, whose demand is created by economic or social circumstances where the expense of a lying-in home or nursing home is prohibitive. It is impossible to assess this demand more than very approximately. Data relating to overcrowding indicate how difficult is the attainment of privacy in small houses. The available accommodation only permits of admission on the plea of extreme urgency.

(4) As regards the form which additional facilities should take, a larger institution is preferable to a series of small maternity homes. Having regard to such administrative considerations as convenience of access, effective radius of service, suitability as a training school, and the distribution of existing accommodation in the City, a maternity hospital should not be less than 100, nor more than 150, beds, and should include a proportion of antenatal and isolation beds, and should be located where existing facilities are fewest.

## II. OUTDOOR MATERNITY SERVICE.

The second part of the remit is to report upon "the need for an outdoor staff of municipal maternity nurses and medical officers."

*Outdoor Maternity Services in Glasgow.*—Excluding births medically attended in the patients' homes, the nature of the attendance at birth, as regards all other cases during 1928, was as follows:—

In Institutions, ... ..	3,945
Maternity Hospital and other Outdoor Nurses, ...	3,670
Midwives, &c. ... ..	10,247
	<hr/>
	17,862
	<hr/>



The number of midwives who from year to year intimate their intention to practise in the City averages about 300, of whom about one-third were admitted to the roll as being in *bona fide* practice at December, 1914. The records for 1927 show that the average number of women attended during labour was 42 per midwife. The actual figures show great variation, as follows:—

			Births.	Midwives.	No. of Births per Midwife.
Under 50 Births,	...	...	2,542	174	14.6
50-100	"	...	3,038	44	69.0
100-200	"	...	3,801	28	135.7
200-300	"	...	1,170	5	234.0
			10,551	251	42.0

It may be explained that some midwives not only attend their patients, but undertake household duties as well, and not infrequently live in during the whole lying-in period. It is obvious, however, that the supply of midwives in Glasgow is more than equal to the demand, having regard to the substantial number in the group with under fifty cases each, the average being only fourteen per annum.

Without reciting the basis on which it has been made, the following table indicates the number of the personnel and the cost which might be involved were the present domiciliary midwifery services superseded by a whole-time municipal service, viz.:—

		Maternity Hospital.	Midwives.	Total.
Number of Births,	...	3,670	10,247	13,917
Number of Midwives,	...	24	68	92
Number of Doctors,	...	2	7	9
Cost,	...	£5,145	£15,465	£20,610

If the births at present attended by doctors at home were to be included, the above totals would fall to be increased by about fifty per cent.

*Powers of Local Authorities.*—At present the powers of the Local Authority under the regulations governing grants-in-aid are limited to "the provision of a midwife for necessitous women in confinement and for areas which are insufficiently supplied with this service," and for "the provision for necessitous women of a doctor for illness connected with pregnancy and for aid for mother or child during the period of confinement." These services are at present performed by the outdoor staff of the Maternity Hospital, while midwives generally are entitled to call medical men to their aid, and, in fact, do so in over 20 per cent. of their cases. I am not aware of any other provision which enables a Local Authority to provide an outdoor midwifery service within its area. The City cannot be said to be "insufficiently supplied" with facilities.

While this description indicates the extent of the existing facilities, it cannot be said that these are sufficiently satisfactory or the best that could be devised. The midwifery services are undergoing evolution. The course of training for midwives has recently been extended



by the Central Midwives Board, while medical undergraduates must now undertake a considerably more intensive course of training in this special branch. These measures are designed to increase the general competence of those who engage in midwifery practice, and it may be laid down as a general principle that the foundation of a good maternity service depends on improved training of doctors and midwives (if possible midwives who have had a general nursing training) in large institutions under the charge of trained experts.

Apart from any question as to the powers of a Local Authority to institute a complete municipal maternity service, the data given above make it clear that there is not, at the present time, any shortage of midwives in Glasgow, while the Midwives (Scotland) Act, 1915, gives ample facilities for obtaining the services of a medical man should any emergency arise during the course of the lying-in period. It may be remarked that there is considerable diversity of view as to the relative functions of midwife, medical practitioner, and obstetric specialist in a domiciliary service. Besides these considerations, any proposal that a complete domiciliary service should be provided by a Local Authority raises other very important questions, such as the standards of training of personnel, whether the provision of a service of this kind should not be a function of extended benefit under the National Insurance Act, as well as questions as to freedom of choice of attendant, and the relationship of the Local Authority to the medical profession and midwives in general practice.

### III. CONVALESCENT HOMES.

At present certain facilities exist for this purpose, of which the principal are Garscube Home, which is administered by the Corporation, and Shandon Home, to which mothers and children are sent both by the Maternity Hospital and the Corporation, and in respect of which the latter has agreed to meet any deficit on administration up to £350 per annum. From the Maternity Hospital mothers and infants are also sent to the Parkend Home at Saltcoats, and to Dunoon Convalescent Homes. The number of mothers sent to these various homes by the Department and the Maternity Hospital during last year was as follows:—

Garscube Home, ...	...	...	...	...	168
Shandon Home, ...	...	...	...	...	219
Parkend Home, ...	...	...	...	...	45
Dunoon Convalescent Homes, ...	...	...	...	...	39
					<hr/>
					471

Any further provision of convalescent homes for post-maternity purposes is part of the broader question of accommodation for convalescence generally, and should, in my opinion, await consideration in the light of possible facilities that may become available to the Corporation after the Local Government (Scotland) Bill has come into operation.

## NOTIFICATION OF BIRTHS.

The number of notifications of births received during 1929 is shown in Appendix Table XV., compared with the corresponding figures for the two preceding years. As notifications include still births, the notifications are always in excess of the number of births registered. Omissions to notify births in terms of the Act average around  $2\frac{1}{2}$  per cent., but most of these are formally intimated after attention has been directed to the omission.

*Nature of Attendance at Births.*—The proportion of births medically attended fell from 48·6 per cent. in 1914 to 40·1 in 1925. In 1929 the proportion was 43·4.

*Still-Births.*—The number of still-births known to occur in Glasgow usually averages about 4 per cent. of the total births. During 1929 there were 1,105 still births, equal to a rate of 4·6. Of the medically attended births there were 254 still-births among home cases, representing a rate of 4·0, and 465 in institutions, equal to a rate of 11·8. Together the rate indicated is 6·8. Among non-medically attended births there were 386, which is equivalent to a rate of 2·9.

## WORK AT THE MATERNITY AND CHILD WELFARE CENTRES.

During last year a number of alterations were made in the weekly time-table of Child Welfare sessions. A second weekly antenatal clinic on Monday morning was begun at Elder Park, and the infant consultation, held there on Friday forenoon, was discontinued, as the afternoon session on the same day appeared to be sufficient. The antenatal consultation at Adelphi Street was changed from the forenoon on Tuesday to the afternoon. The Thursday afternoon antenatal clinic at Avenue Park Street being sufficient for the numbers attending, the forenoon session on the same day was discontinued. The Pollokshaws consultation already referred to is held on Tuesday forenoon.

The revised list of clinics is given on the following page.

## LIST OF MATERNITY AND CHILD WELFARE CLINICS.

	9 a.m.	1.30 p.m.
<b>Monday,</b>	1 Maxwell St., Partick (Antenatal). Church Hall, Garngad Hill. 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. 2 Summerton Road, Govan (Antenatal). Elder Park (Ante-natal).	20 Cochrane St. (Ultra-Violet Ray). 1 Maxwell Street, Partick. 60 Avenuepark Street. 106 Orr Street. 130 Adelphi Street, S. 132 Weir Street. 2 Summerton Road, Govan (Ultra-Violet Ray).

day,	77 Port Street (1-5 years). Church Hall, Garngad Hill. 194 Campbell St., Springburn. 60 Avenuepark Street. Wellshot Road, Shettleston. Pollokshaws. 2 Summerton Road, Govan.	77 Port Street. 614 Dobbie's Loan (Antenatal). 106 Orr Street. Wellshot Road, Shettleston. Adelphi Street, (Antenatal). Elder Park Centre (Antenatal).
uesday,	20 Cochrane St. (Ultra-Violet Ray). 77 Port Street. 60 Avenuepark Street. 106 Orr Street (1-5 years). 130 Adelphi Street, S. 132 Weir Street. 2 Summerton Road, Govan (Ultra-Violet Ray).	20 Cochrane Street. 1 Maxwell Street, Partick (1-5 years). 194 Campbell St., Springburn (Antenatal). 614 Dobbie's Loan. 106 Orr Street. 130 Adelphi Street, S. (Antenatal). 132 Weir Street. 2 Summerton Road, Govan.
ay,	20 Cochrane Street (1-5 years). 1 Maxwell Street, Partick. 614 Dobbie's Loan (1-5 years). 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 132 Weir Street.	1 Maxwell Street, Partick (1-5 years). 60 Avenuepark Street (Antenatal). 614 Dobbie's Loan (-1 year). 106 Orr Street. Wellshot Road, Shettleston (Antenatal). 130 Adelphi Street, S. 132 Weir Street. 2 Summerton Road, Govan (Antenatal).
y,	1 Maxwell St., Partick (Antenatal). 194 Campbell Street, Springburn. 614 Dobbie's Loan (1-5 years). 106 Orr Street. Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 2 Summerton Road, Govan.	20 Cochrane St., (Ultra-Violet Ray). 1 Maxwell Street, Partick. 194 Campbell Street, Springburn. 614 Dobbie's Loan. 106 Orr Street (Antenatal). 2 Summerton Road, Govan (Ultra-Violet Ray). Elder Park Centre.

nity Hospital Ante- and Post-natal Clinics—Daily, Monday to Friday, at 1.30 p.m.

Vaccination is also done at 20 Cochrane Street on Tuesdays at 12.30 p.m.

The number of Centres is now 14, at which are held weekly 71 consultations, 13 of them being ante-natal clinics, 52 infant consultations, and 6 ultra-violet light treatment clinics. At the Centres infant consultations to the number of 2,625 were held in 1929 compared with 2,593 during the preceding year. In addition to these there were 583 ante-natal and 295 actinotherapy sessions.

The total number of attendances at the infant consultations was 129,120, an average of nearly 56 per consultation, of which between three and four were primary attendances. For every primary attendance under one year there were eight subsequent attendances and for every primary attendance between one and five there were over 30 subsequent attendances. The total number of attendances is slightly higher than that of the preceding year, the primary attendances being fewer by 302, while subsequent attendances are increased by 1,543. Increases in both primary and subsequent attendances occurred at Cowcaddens, Garnghill, Govan, Maryhill and Partick.

The greatest reduction took place at Bridgeton Centre in Orr Street, where the primary attendances were reduced from 1,770 to 1,474,

and the subsequent from 22,228 to 21,100. The numbers at Port Street and the primary attendances at Shettleston and Cochrane Street were also fewer.

The following table gives the attendances at each Consultation Centre during the years 1928 and 1929:—

#### ATTENDANCES AT INFANT CONSULTATIONS, 1929.

	No. of Consultations held.	Children -1 Year.		Children +1 Year.		Total		1928	
		No. of Attendances.		No. of Attendances.		No. of Attendances		Total No. of Attendances	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Adelphi Street, ...	302	1,123	8,803	269	10,311	1,392	19,114	1,339	19,114
Cowcaddens, ...	256	694	5,567	265	7,042	959	12,609	954	12,609
Elderpark, ...	73	237	1,825	—	3	237	1,828	270	2,095
Garngad Hill, ...	100	332	2,157	95	3,274	427	5,431	358	4,073
Govan, ...	154	433	3,173	131	3,071	564	6,244	542	5,703
Orr Street, ...	403	1,289	12,602	185	8,498	1,474	21,100	1,770	22,870
Maryhill, ...	150	432	3,654	129	4,193	561	7,847	543	5,690
Partick, ...	252	521	3,980	189	4,918	710	8,898	690	7,588
Port Street, ...	153	393	2,884	138	2,991	531	5,875	606	6,481
Shettleston, ...	256	598	5,761	182	6,694	780	12,455	839	11,616
Weir Street, ...	252	450	3,919	141	5,026	591	8,945	570	9,515
Cochrane Street, ...	102	165	1,346	59	1,614	224	2,960	321	2,639
Springburn, ...	154	452	3,090	160	3,101	612	6,191	669	6,860
Pollokshaws,* ...	18	58	249	49	205	107	454	—	—
		2,625	7,177	59,010	1,992	60,941	9,169	119,951	9,471
		66,187		62,933		129,120		127,871	

\* Opened, 3rd Sept., 1929.

The illness, &c., recorded on first attendance at the consultations are here summarised:—

#### INFANT CONSULTATIONS.—ILLNESSES, &C., RECORDED.

	1928.		1929.	
	-1 Year.	+1 Year.	-1 Year.	+1 Year.
Debility and Malnutrition (including Underweight), ...	412	202	505	169
Birth Debility, ...	84	—	75	—
Prematurity, ...	46	—	66	—
Marasmus, ...	8	1	12	3
Diseases of Digestive System,	4	3	2	2
Diseases of Respiratory System,	—	3	4	2
Measles, ...	1	2	—	—
Whooping-cough, ...	1	3	—	—
Rickets, ...	21	124	23	162
Others, ...	1	1	—	10
TOTAL, ...	578	339	687	348

## SUPPLY OF MILK AND MEALS TO NECESSITOUS MOTHERS AND CHILDREN.

During the year supplies of milk continued to be given to expectant and nursing mothers, and to children up to five years of age, under the following general conditions:—(1) Regular attendance at a Child Welfare Centre; (2) when the case was necessitous; and (3) when a supply of milk was certified by the Medical Officer of the Centre to be required on the grounds of health.

Except where conditions of health required a more frequent attendance, infants are not expected to attend more frequently than once a fortnight, and toddlers once in six weeks.

While compliance with above general conditions is usually required, exception is made where a mother or child, on first attendance at an infant consultation, presents conditions of health which suggest that an immediate grant of milk may be desirable or necessary.

The following table summarises the applications and grants for the year 1929:—

			Applications Granted.		Applications	Total.
			Free.	At Reduced Price.	Refused.	
Fresh Milk,	...	...	36,495	1,249	273	38,017
Dried Milk	...	...	215	4	—	219
			36,710	1,253	273	38,236

These totals represent the number of individuals included in the applications. Grants, when made, are mainly for a period of six weeks at a time.

(a) *Fresh Milk.*—The following table further analyses the number of applications for fresh milk granted during the year:—

### ORIGINAL APPLICATIONS.

Rate charged to Applicant.	Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under 5 years.	Total Number of Pints ordered.
Half-Price, ...	138	61	93	6,468
Free, ...	3,007	1,703	1,560	136,973
	3,145	1,764	1,653	143,441

### REPEAT APPLICATIONS.

Half-Price, ...	831	182	913	45,843
Free, ...	25,043	7,335	25,897	1,385,937
	25,874	7,517	26,810	1,431,780

### TOTALS.

Half-Price, ...	969	243	1,006	52,311
Free, ...	28,050	9,038	27,457	1,522,910
	29,019	9,281	28,463	1,575,221



This table shows that 3,145 original applications were granted during the year for supplies of fresh milk, covering 1,764 expectant or nursing mothers, and 1,653 children under five years of age, or, together, 3,417 individuals. The repeat applications of these families and of those previously on the roll number 25,874, making a total of 29,019 applications granted. The total quantity of fresh milk ordered was 1,575,221 pints, and the cost £14,538.

Certificates for grants of fresh milk were given by the medical officers at the various Centres for the following reasons:—

SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS  
FOR FRESH MILK.

Diseases.	Mothers.		Children.		Total.
	Expectant.	Nursing.	-1 year.	-5 years.	
Debility, ... ..	1,027	206	147	946	2,326
Progressing, ... ..	—	—	512	1,215	1,727
Insufficiency of Breast Milk, ...	—	7,747	—	—	7,747
Child losing Weight, ... ..	—	—	87	580	667
Child under Weight, ... ..	—	—	4,675	15,029	19,704
Child's Weight stationary, ...	—	—	101	592	693
Malnutrition, ... ..	—	—	95	181	276
Marasmus, ... ..	—	—	6	—	6
<i>Debility—after—</i>					
Infectious Diseases, ... ..	—	—	74	528	602
Other Diseases, ... ..	193	—	297	1,063	1,553
<i>Infectious Diseases—</i>					
Measles, ... ..	—	—	2	12	14
Whooping-cough, ... ..	—	—	5	23	28
Chickenpox, ... ..	—	—	—	3	3
<i>General Diseases—</i>					
Anæmia, ... ..	56	8	1	7	72
Rickets, ... ..	—	—	128	2,087	2,215
<i>Diseases of Respiratory System—</i>					
Bronchitis, ... ..	1	—	5	25	31
Pneumonia, ... ..	—	—	3	15	18
<i>Others—</i>					
Enteritis, ... ..	—	—	1	11	12
Albuminuria, ... ..	43	—	—	—	43
Influenza, ... ..	—	—	2	5	7
<b>Totals, ...</b>	<b>1,320</b>	<b>7,961</b>	<b>6,141</b>	<b>22,322</b>	<b>37,744</b>

(b) *Dried Milk.*—During the year supplies of dried milk were also given in suitable cases, the brands in use being “Glaxo” and “Oster-milk,” the number of applications received being as follows:—

	Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under five years.	Number of Packets Ordered.
Original Applications ...	120	11	111	151
Repeat           ,,       ...	1,723	30	1,752	2,847
<b>Total, ... ..</b>	<b>1,843</b>	<b>41</b>	<b>1,863</b>	<b>2,998</b>

While the same scale of "necessitousness" is applied to applications for dried milk as to applications for fresh milk, the conditions of grant are somewhat different, for, while grants of fresh milk are refused to families whose income is over the scale, supplies of dried milk may be given at the wholesale rate. The following summary shows the number of packets and the amount recovered, as well as the loss falling upon the Corporation, for the supplies of dried milk issued under these conditions:—

Price per Packet.	Number of Packets Issued.	Cost to Corporation.	Amount Recovered.	Gain or Loss to Corporation.
Full Price, ...	1,771	£118 19 1	£133 14 3	+£14 15 2
Part Price, ...	19	1 5 4	0 19 0	- 0 6 4
Free, ...	1,208	80 10 8	—	- 80 10 8
Total, ...	2,998	£200 15 1	£134 13 3	- £66 1 10

In all, 2,998 packets were distributed under the scheme, of which 1,771 were charged at full price, 19 at part price, while 1,208 were given free, the net cost to the Corporation being £66 1s. 10d.

The reasons given in the medical certificate forms for the free and reduced price grants are shown in the following summary:—

#### SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS FOR DRIED MILK.

Diseases	Mothers.		Children.		Total.
	Expectant	Nursing.	- 1 Year.	- 5 Years.	
Debility, ...	—	—	3	—	3
Progressing, ...	—	—	12	1	13
Insufficiency of Breast Milk,	—	6	—	—	6
Child Losing Weight, ...	—	—	—	—	—
Child Under Weight, ...	—	—	182	2	184
Child's Weight Stationary,	—	—	1	—	1
Malnutrition, ...	—	—	8	—	8
Debility after Infectious diseases,	—	—	—	—	—
Do. other diseases,	—	—	1	—	1
Anæmia, ...	—	—	2	—	2
Whooping-cough, ...	—	—	1	—	1
Totals, ...	—	6	210	3	219

*Economic Conditions.*—The following summary shows the conditions under which applications came within the scale of allowances:—

#### *Applications Refused—*

Income over scale, ...	273
<i>Applications granted at half-price,</i> ...	1,253

*Carry forward,* 1,526

Brought forward, 1,526

*Applications granted free—*

On Unemployed Relief Scale, ... ..	16,458
Parish and Health Insurance, ... ..	1,750
Parish and Pension, ... ..	935
Illegitimacy, ... ..	515
Employed full-time, but under Scale, ...	2,981
Waiting Labour Bureau and Parish, ...	463
Employed part-time, ... ..	815
Pension only, ... ..	298
Bureau only, ... ..	10,890
Deserted Wife, ... ..	494
Health Insurance, ... ..	99
Pension and Health Insurance, ... ..	52
Compensation, ... ..	179
Labour Bureau and Pension, ... ..	287
Labour Bureau and room let, ... ..	260
No Income, ... ..	134
Strike pay, ... ..	2
Room let only, ... ..	4
Family earnings, ... ..	65
Family earnings and Pension, ... ..	29
	<hr/>
	36,710
	<hr/>
	38,236
	<hr/>

## SEWING, &amp;c., CLASSES.

Classes for sewing and social evenings for mothers and children were arranged at various Centres during the winter months, as shown below:—

Centre.	Nature of Class.	Period.	Day and Hours.	Average Attendance.
COWCADDENS	Sewing - - -	Nov. to Mar.	Mon., 7 p.m.	28
Do.	Play Centre - - -	Nov. to Mar.	Wed., 6 p.m.	28
PARTICK	Sewing - - -	Oct. to Mar.	Tues. 7 p.m.	16
PORT STREET	Sewing, etc. - - -	Sep. to Mar.	Thurs. 2 p.m.	30
MARYHILL	Sewing - - -	Oct. to Apr.	Tues. 7 p.m.	40
Do.	Cookery - - -	Mar. to Apr.	Wed. 2 p.m.	20
SPRINGBURN	Sewing - - -	Jan. to Mar.	Tues. 7.30 p.m.	12
KINGSTON	Sewing - - -	Oct. to Mar.	Thurs. 7.30 p.m.	40
SHETTLESTON	Sewing - - -	Oct. to Apr.	Wed. 7 p.m.	65
Do.	Cookery - - -	Oct. to Apr.	Mon. 2.30 p.m.	12
Do.	Play Centre - - -	Oct. to Mar.	Mon. 6.15 p.m.	30
			Fri. 7 p.m.	
BRIDGETON	Sewing - - -	Oct. to Apr.	Wed. 7 p.m.	95
HUTCHESONTOWN	Sewing - - -	Oct. to Apr.	Tues. 2.30 p.m.	12
ARKLET ROAD	Sewing - - -	Oct. to Mar.	Tues. 7 p.m.	45
Do.	Singing - - -	Feb. to Apr.	Thurs.	15
GOVAN TOWN	Sewing - - -	Oct. to Mar.	Thurs. 7 p.m.	30
HALL				

The above classes are mostly carried on with the assistance of the members of the various branch committees of the Glasgow Infant

Health Visitors' Association, and, as will be seen from the following syllabus for the Bridgeton Mothers' Club for the winter session 1929-30, the course entails a considerable amount of time on the part of those who co-operate in this most useful and practical method of assisting in the welfare movement.

#### SYLLABUS OF LECTURES AND DEMONSTRATIONS.

uesday,

16—Lecture, Personal Hygiene	-	-	Cleanliness.
23—Demonstration, Home Nursing	-	-	Bed Making.
30—Social Meeting	-	-	Mothers responsible for Programme.
6—Lecture, Home Nursing	-	-	Prevention and First Aid of Illness and Accident.
13—Demonstration, Cooking	-	-	Two Cheap Wholesome Meals.
20—Lecture, Personal Hygiene	-	-	Exercise and Air.
27—Demonstration, Cooking	-	-	The Making of Sick Room Diets.
4—Social Meeting and Dance	-	-	Programme to be arranged.
11—Lecture, Personal Hygiene	-	-	Diet and Elimination.
18—Lecture, Home Nursing	-	-	Prevention and First Aid of Illness and Accident.

#### CHRISTMAS AND NEW YEAR HOLIDAYS.

8—Mothers invited to Party by Superintendent	-	-	Admission by Invitation only.
15—Lecture, Child Welfare	-	-	The General Care of Infants.
22—Demonstration, Cooking	-	-	Two Cheap Supper Dishes.
29—Lecture, Child Welfare	-	-	The Importance of Breast Feeding.
5—Demonstration, Cooking	-	-	Some Baking Lessons.
12—Lecture, Child Welfare	-	-	The Feeding of Infants, 1 to 2 years.
19—Demonstration, Cooking	-	-	Some Vitamin Foods.
26—Social Meeting (Fancy Dress)	-	-	Prizes for Best Costumes.
5—Lecture, Child Welfare	-	-	The Feeding of Children, 2 to 5 years.
12—Demonstration, Home Nursing	-	-	The Making of Poultices and Fomentations.
19—Lecture, Personal Hygiene	-	-	12 Rules for the Expectant Mother.
26—Demonstration, Cooking	-	-	Mothers' Choice.
1—Closing Social	-	-	Distribution of Prizes.

#### ANTENATAL CONSULTATIONS.

*Glasgow Royal Maternity Hospital.*—The total number of cases attending the antenatal dispensary for the first time was 4,742 during 1929, compared with 4,431 in 1928, while the total attendances during the respective years were 10,355 and 9,750. During 1929 3,113 cases were treated to a termination in delivery, of which 1,047 were attended in their own homes.

The number admitted to the antenatal wards during 1929 was 1,141, compared with 1,172 in 1928.

At the infant consultations held at the Maternity Hospital there were 7,502 attendances, as compared with 7,080 during the previous year. The first attendances numbered 1,059.

## ANTENATAL DISPENSARY—

	1927.	1928.	1929.
Number attending for first time, ...	4,267	4,431	4,742
Total attendances, ... ..	10,011	9,750	10,355
Number treated to a termination, ...	2,835	2,975	3,113
Number sent to Hospital—			
(a) For confinement, ... ..	1,626	1,689	1,781
(b) „ miscarriage, ... ..	100	74	77
(c) „ antenatal treatment, ...	293	348	373
(d) „ ante-natal treatment and confinement, ... ..	189	209	185
(e) For antenatal treatment and miscarriage, ... ..	25	29	23
Number treated on District—			
(a) For confinement, ... ..	890	964	1,036
(b) „ miscarriage, ... ..	5	10	11

## ANTENATAL WARDS—

Average number under treatment, ...	22	32	31
Number admitted, ... ..	919	1,172	1,141
Total days, ... ..	8,036	11,772	11,249
Condition on dismissal—			
(1) Recovered, ... ..	152	281	262
(2) Improved, ... ..	147	101	184
(3) Confinement completed, ...	558	672	635
(4) Died, ... ..	4	7	6
(5) No change, ... ..	64	94	60

## INFANT CONSULTATION—

First Attendances, ... ..	1,104	1,004	1,059
Subsequent Attendances, ... ..	5,029	6,076	6,443
Total, ... ..	6,133	7,080	7,502

In addition, Antenatal Clinics are held at nine of the Corporation Consultation Centres. Altogether there were 583 clinic sessions held at the centres during 1929, compared with 503 during the previous year. Additional sessions have been arranged at Partick and Hutchesontown. The total number of primary attendances during 1929 was 2,992, compared with 2,651 during the preceding year, while the respective figures for subsequent attendances are 10,882 and 9,142. The total attendances, 13,874, are higher by 2,081. The number of consultations and attendances at each centre are shown in the following table.



## ATTENDANCES AT ANTENATAL CLINICS, 1929.

	No. of Clinic Sessions.	No. of Attendances.		
		Primary.	Subsequent	Total.
Partick, ... ..	87	319	1,312	1,631
Cowcaddens, ... ..	51	254	1,321	1,575
Maryhill, ... ..	52	248	968	1,216
Springburn, ... ..	51	226	810	1,036
Orr Street, ... ..	50	328	964	1,292
Shettleston, ... ..	52	253	1,102	1,355
Hutchesontown, ... ..	89	543	1,628	2,171
Govan, ... ..	100	485	1,415	1,900
Elderpark, ... ..	51	336	1,362	1,698
	583	2,992	10,882	13,874

The following tables show (1) the age of mothers who attended and (2) the conditions requiring attention which were found:—

Ages of Mothers.	Partick	Cow- caddens	Mary- hill	Spring- burn	Orr Street	Shett- leston	Hutche- son- town	Govan	Elder- park	Totals.
-20	19	11	8	8	13	10	21	24	15	129
-25	72	42	71	51	77	56	121	131	86	707
-30	102	86	67	75	88	72	150	130	95	865
-35	60	62	52	53	86	66	130	107	63	679
-40	42	28	31	30	46	40	83	57	50	407
-45	11	10	11	3	9	4	17	23	12	100
45+	2	—	—	—	—	—	1	4	—	7
Not Pregnant,	10	16	8	6	10	4	17	12	15	98
	318	255	248	226	329	252	540	488	336	2992

Note.—Cases transferred from Partick to Cowcaddens (1) and Govan (1); from Cowcaddens to Partick (1); from Hutchesontown to Govan (2) and Cowcaddens (1); from Shettleston to Orr Street (1)

Conditions Found	Partick	Cow- caddens	Mary- hill	Spring- burn	Orr Street	Shett- leston	Hutche- son- town	Govan	Elder- park	Totals.
Venereal Disease,	14	12	8	6	9	8	33	12	5	107
Varicose Veins,	17	52	25	15	69	52	23	45	47	345
General Debility,	66	65	27	19	51	63	74	85	77	527
Cardiac Disease,	9	14	4	6	16	5	11	27	27	119
Hyperemesis Gravidarum,	2	6	1	1	2	1	3	3	1	20
Alimentary Conditions,	77	106	45	41	85	75	99	100	76	704
Dentition (Bad),	52	85	33	40	51	103	85	222	101	772
Contracted Pelvis,	16	43	11	7	26	9	11	12	9	144
Kidney Disease, (Albuminuria),	25	55	21	17	41	29	109	107	19	423
Respiratory Disease,	17	8	11	15	50	18	46	44	22	231
Hæmorrhage,	3	—	2	8	16	6	16	11	9	71
No apparent disease,	20	9	30	27	47	31	79	45	28	316
Other conditions,	77	109	68	39	145	49	50	27	21	585
	395	564	286	241	608	449	639	740	442	4,364

The conditions found on medical examination are enumerated in the above statement, but as in many cases two or three causes of illness were present, the total number of conditions is much in excess of the number of mothers. The most frequent conditions requiring attention were those of the alimentary system (including constipation), general debility, anæmia, varicose veins, and albuminuria.

About 17 per cent. were primiparæ, as shown in the following summary:—

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettle-ston	Hutcheson-town	Govan	Elder-park	Totals.
Primiparæ ...	48	27	50	23	73	40	88	76	52	477
Multiparæ ...	260	212	190	197	246	208	435	400	269	2,417
Total,	308	239	240	220	319	248	523	476	321	2,894

The results, so far as known, as to whether pregnancy resulted at full term, prematurely, &c., are here given, together with the number of still-births:—

#### PREVIOUS YEAR'S CASES TERMINATED IN 1929.

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettle-ston	Hutcheson-town	Govan	Elder-park	Totals.
Alive, ...	60	54	57	44	68	33	91	106	85	603
Still-Births, ...	3	1	—	2	—	1	6	3	2	18
Full-term, ...	60	53	52	44	67	37	94	103	85	600
Premature, ...	3	2	5	2	1	2	3	1	2	21
Abortion or Miscarriage, ...	—	—	3	—	3	—	2	3	1	12
Left District and no trace, ...	4	—	—	2	—	3	—	1	—	10
Not Pregnant, ...	—	—	1	1	2	—	2	1	2	9
	67	55	61	49	73	42	101	114	90	662

*Note.*—Cases transferred from Partick to Govan (1) and Cowcaddens (1); from Cowcaddens to Spring-burn (1) and Orr Street (1); from Elderpark to Partick (1).

#### 1929. CASES.

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettle-ston	Hutcheson-town	Govan	Elder-park	Totals.
Alive, ...	231	156	154	128	228	148	354	307	212	1,918
Still-Births, ...	10	3	7	5	8	10	15	16	11	85
Full-term, ...	232	152	150	124	234	153	343	319	220	1,927
Premature, ...	9	7	11	9	2	5	26	4	3	76
Abortion or Miscarriage, ...	2	—	4	5	7	4	4	6	6	38
Left District and no trace, ...	4	5	1	2	4	5	8	1	1	31
Died before Termination, ...	—	—	1	—	—	—	—	1	—	2
Not Pregnant, ...	10	16	8	6	10	4	17	12	15	98
Not Terminated, ...	61	75	73	80	72	81	142	145	91	820
	318	255	248	226	329	252	540	488	336	2,992

Among the 2,676 patients whose pregnancy terminated in 1929, 12 deaths occurred, which is equivalent to a death-rate of 4·5 per 1,000 births. This is an improvement on the rate for last year, which was 6·6. The causes of death were as follows:—puerperal sepsis, six; puerperal albuminuria and convulsions, one; “other accidents of child-birth,” two; and one each from non-puerperal disease of the breast, jaundice, and cancer of the stomach.

Of the cases of puerperal fever, two were complicated by bronchial pneumonia and died in the early part of the year. The third case had many complications, and when examined at the Antenatal Clinic there was a suspicion of tuberculosis. The fourth case had a contracted pelvis, and only attended the clinic within a month of confinement. The fifth had a very septic mouth, but refused to attend for dental treatment. The sixth case was a primipara of 16 years of age. One of the deaths from “other accidents of child-birth” was due to a Cæsarean section, while in the other, who attended the clinic once at the sixth month, death was due to breach presentation which had necessitated removal to the Maternity Hospital.

The total number of still-births (103) occurring among the pregnancies included in this analysis represents a rate of 3·9 per cent., which may be compared with the average of 4·6 per cent. for the City generally. The percentage of still-births among cases attending during the previous year was 3·6.

A similar comparison as to whether the births occurred at full time or otherwise, shows that during 1929 the premature births formed about 3·7 per cent. of the total, as compared with 3·1 per cent. for the previous year. Abortions equalled 1·9 of the total pregnancies.

The month at which the first attendance was made at the clinic is given below, and shows that almost one-half attended before the seventh month, and the remainder from the seventh month onwards.

Month of Attendance.	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettles-ton	Hutcheson-town	Govan	Elder-park	Totals.
1 ...	1	2	—	1	3	4	2	—	—	13
2 ...	12	22	12	12	15	22	22	3	2	122
3 ...	25	24	22	35	19	20	41	16	14	216
4 ...	34	24	27	22	20	15	60	29	35	266
5 ...	38	50	26	31	33	29	100	49	43	399
6 ...	41	44	34	41	61	50	99	56	52	478
7 ...	72	30	45	41	77	56	112	102	79	614
8 ...	59	31	36	28	38	41	73	110	63	479
9 ...	26	12	38	9	53	11	14	111	33	307
Not Pregnant,	10	16	8	6	10	4	17	12	15	98
	318	255	248	226	329	252	540	488	336	2,992

## MATERNAL DEATHS.

The maternal death-rate per 1,000 births during 1929 was a little more favourable at 8·33 as against 8·79 during 1928. When compared with the rates for the preceding years, those of the last two years

are comparatively heavy, most of the increase being due to a larger number of deaths from puerperal fever. Apart from the fact that more accurate diagnosis would tend to increase the number classified under this cause, outbreaks of associated cases of puerperal fever occurred in both 1928 and 1929. Both these outbreaks and another in 1926 are dealt with in a report on "Puerperal Fever in Maternity Hospitals," which has been published by the Department of Health for Scotland.

The other causes of maternal mortality given in the following table show considerable variation from year to year. Deaths from uncontrollable vomiting were more numerous than in any of the preceding years, and so also were those from puerperal hæmorrhage. In the opinion of gynecologists albuminuria of pregnancy and eclampsia should seldom prove fatal if antenatal treatment is given in time, and it is satisfactory to record that only 15 deaths occurred from these causes in 1929, against 36 during the preceding year, while the rate 0.66 per thousand births is only about half the average of the rates during the past six years. Only one death from these causes occurred among mothers who attended the Antenatal Consultations.

STATEMENT SHOWING MATERNAL DEATHS AND RATE PER 1,000 BIRTHS  
IN GLASGOW, IN THE YEARS 1921-1929.

Rate per 1,000 Births											Deaths	
	1921	1922	1923	1924	1925	1926	1927	1928	1929	1929		
Abortion Miscarriage, - -	.30	.64	.49	.32	.39	.65	.55	.68	.61	14		
Uncontrollable Vomiting, - -	.13	.14	.07	.20	.47	.41	.17	.47	.53	12		
Ectopic Gestation, - -	.20	.11	.11	.16	.28	—	.08	.08	.17	4		
Other Diseases and Accidents of Pregnancy, - - -	.24	.32	.22	.39	.35	.04	.38	.21	.35	8		
Puerperal Hæmorrhage, - -	.87	.88	.79	.39	.98	.61	.76	.63	1.10	25		
Other Accidents of Parturition, -	.54	.60	.75	.51	.67	.98	.89	.97	.96	22		
Puerperal Sepsis, - - -	2.32	3.00	2.55	2.21	2.32	2.11	1.99	3.34	3.16	72		
Phlegmasia Alba Dolens, Embolism, - - -	.13	.28	.15	.04	.24	.37	.30	.25	.22	5		
Albuminuria of Pregnancy, Eclampsia, - - -	.87	.78	1.31	.95	1.14	1.06	1.23	1.52	.66	15		
Other Diseases of Puerperium, -	.77	.81	.64	.67	.71	.41	.82	.63	.48	11		
Puerperal Diseases of Breast, -	—	.04	—	—	.08	.04	.04	—	.09	2		
Totals—Glasgow, -	6.39	7.60	7.08	5.84	7.63	6.68	7.21	8.79	8.33	190		
„ Scotland, -	6.38	6.60	6.42	5.82	6.16	6.40	6.43	6.98	6.9	638		

Maternal mortality in Glasgow has been the subject of special inquiry during the past seven or eight years. Since 1922 deaths of women of child-bearing ages have been scrutinised in order to ascertain if these were complicated by some condition associated with confinement or pregnancy. This may explain, to some extent, the unfavourable comparison of Glasgow with other cities. It may also be pointed out that a general reduction in the birth-rate produces a larger proportion of primiparæ, among whom confinements, being more difficult, are attended by a greater mortality. This reduction in fertility, and

the later age of marriage, are also important factors, as maternal deaths are usually lowest among younger mothers, especially those undergoing their fourth or fifth pregnancy.

With regard to the question of more accurate classification of deaths, a comparison of all female deaths between the ages of 15 and 45, during the years 1921-22 with 1927-28, shows that there has been a reduction of 10 per cent., while those classified as due to puerperal sepsis have increased by nine per cent. This and other maternal causes together have increased by 12 per cent. The birth rate, on the other hand, was less by 23 per cent., and the general death-rate by 12 per cent. This analysis would seem to indicate that the maternal death-rate has definitely increased, but how much of this is due to the various causes referred to above, it is impossible to say without making a special detailed analysis of all the conditions associated with this mortality.

The Department of Health is instituting a special enquiry into the causes associated with maternal deaths. For this purpose the Registrar-General was authorised, by an Order in Council, dated 8th June, 1929, to alter the Certificate of Death in order to ascertain from the medical attendant, if in the case of the death of a married woman the death actually took place during pregnancy or within four weeks of the termination of pregnancy. This information is in turn communicated by the Registrars to the Medical Officer of Health. For the purpose of obtaining this information a special form has been issued so that information is sent to the Public Health Department immediately such deaths are registered. Confidential enquiries are subsequently made and the results communicated to the Department of Health.

### ULTRA-VIOLET RAY CLINICS.

No alteration has taken place in the arrangements for light treatment of children suffering from rickets, malnutrition, &c. The number of diets held weekly at Cochrane Street and Govan Town Hall remain the same as at the end of last year.

The installation and the results of treatment have been fully dealt with in previous reports, so that only the records of numbers treated are here given in respect of 1929.

#### RECORD OF ATTENDANCES AND CONSULTATIONS DURING 1929.

	Number of Clinics held.	Children, -1 year. Number of Attendances.		Children, +1 year. Number of Attendances.		Mothers. Number of Attendances.		Total Number of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Cochrane Street	- 148	98	713	450	7,689	41	277	589	8,679
Govan, - - -	- 147	34	352	222	5,137	25	457	281	5,946
	295	132	1,065	672	12,826	66	734	870	14,625
		1,197		13,498		800		15,495	



AGES OF CHILDREN ATTENDING FOR THE FIRST TIME—						Cochrane Street.	Govan.
-1 year,	...	...	...	...	...	98	36
-2 years,	...	...	...	...	...	243	110
-3 „	...	...	...	...	...	123	62
-4 „	...	...	...	...	...	57	38
-5 „	...	...	...	...	...	27	10
						<u>548</u>	<u>256</u>

## REASONS FOR TREATMENT OF CASES ATTENDING FOR FIRST TIME.

CHILDREN—								Cochrane Street.	Govan.
Rickets.	1. Prophylaxis,	-	-	-	-	-	-	10	—
	2. Early Rickets,	-	-	-	-	-	-	112	48
	3. Moderate Rickets,	-	-	-	-	-	-	136	32
	4. Marked Rachitic deformity,	-	-	-	-	-	-	93	76
Rickets c. Tetany,		-	-	-	-	-	-	8	—
Debility after Infectious Disease,		-	-	-	-	-	-	20	23
Debility after Acute Illness,		-	-	-	-	-	-	35	
Debility—weight stationary, or losing, or not thriving,		-	-	-	-	-	-	29	44
Bronchitis,		-	-	-	-	-	-	8	1
Malnutrition,		-	-	-	-	-	-	58	12
Marasmus,		-	-	-	-	-	-	—	5
Mentally Defective,		-	-	-	-	-	-	12	—
Nervous Instability,		-	-	-	-	-	-	14	7
Skin Diseases,		-	-	-	-	-	-	4	—
Special,		-	-	-	-	-	-	9	8
								<u>548</u>	<u>256</u>

## MOTHERS—

Pregnancy,	-	-	-	-	-	-	-	-	31	25
Nursing Mothers,	-	-	-	-	-	-	-	-	10	—
									<u>41</u>	<u>25</u>

## INFANT VISITATION.

Under the scheme of infant visitation every birth is visited if the notification does not state that a medical practitioner has been in attendance, and the following table shows the record of those visited, together with certain information obtained :—

	1927	1928	1929
Inquiry cards returned, ...	17,683	17,919	17,661
Full information obtained,	16,757	16,969	16,786
Doctor found in attendance,	32	33	17
Wrong addresses, ...	—	—	—
Others, ...	894	917	858
Inquiry cards issued, ...	17,742	17,862	17,466

*Of those for whom full information was obtained—*

			1927	1928	1929
Legitimate, ... ..			15,838	15,872	15,500
Illegitimate, ... ..			987	1,041	1,099
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Born at full term, ... ..			15,990	16,072	15,734
Premature births,... ..			835	841	865
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*Condition of Infant at Birth—*

Well nourished, ... ..			13,456	13,932	14,112
Fairly nourished, ... ..			2,049	1,574	1,171
Badly nourished, ... ..			642	695	580
Still-born, ... ..			678	712	736
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*Nature of Feeding at First Visit—*

Breast, ... ..			13,650	13,524	13,264
Artificial, ... ..			1,594	1,550	1,695
Breast and Artificial, ... ..			378	542	415
Still born, ... ..			678	712	736
Dead at First Visit, ... ..			525	579	489
Adopted, ... ..			—	6	—

In addition to home visitation, the nurses attend the Child Welfare Consultations in their own districts. They thus have an opportunity of reporting to the doctor any illness or condition requiring medical treatment, and of following up the case afterwards to see that the treatment recommended is carried out.

The following series of summaries indicate the number of first and revisits undertaken, together with a record of conditions found:—

## FIRST VISITS.

			1927	1928	1929
Infants visited under 1 year of age,			15,307	15,392	15,283
Infants visited over 1 year of age,			—	—	—
Removed and new address not traced,			383	337	316
In hospital or nursery, ... ..			100	105	129
Dead, ... ..			533	640	571
Refused admittance, ... ..			2	2	—
Doctor in attendance, ... ..			34	41	13
Information refused, ... ..			15	24	10
Still-born, ... ..			645	675	735
Visits unnecessary, ... ..			212	212	128
Adopted, ... ..			41	33	54
Nursed out, ... ..			7	18	22
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			17,279	17,479	17,261
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## REVISITS.

	1927	1928	1929
Infants visited under 1 year of age,	1,313	1,225	1,151
Infants visited over 1 year of age,	2,135	2,646	2,286
	3,448	3,871	3,437
Removed and new address not traced,	843	972	1,101
Out at time of visit, ... ..	126	202	159
In hospital or nursery, ... ..	34	25	20
Dead, ... ..	511	630	556
Adopted, ... ..	20	27	29
Refused admittance, ... ..	—	—	—
Doctor in attendance, ... ..	—	2	2
Visits unnecessary, ... ..	1	—	13
Nursed out, ... ..	12	16	13
Information refused, ... ..	—	3	—
Visits resented, ... ..	—	—	1
	4,995	5,748	5,331

The children found alive on the occasion of the first visit by the Health Visitor are classified in the following table under three groups:—

	Well.	Fair.	Bad.	Total.
1927, ... ..	13,331	1,851	125	15,307
1928, ... ..	13,617	1,658	117	15,392
1929, ... ..	13,840	1,326	117	15,283

Generally speaking, those classified as “well” on the occasion of the first visit were not revisited. The following table is a summary of results found at final visit:—

	Still Good.	Much Improved.	Slightly Improved.	No Improvement.	Worse.	Total.
1927, ... ..	2,504	894	44	6	—	3,448
1928, ... ..	3,051	813	5	2	—	3,871
1929, ... ..	2,879	538	19	1	—	3,437

## GLASGOW INFANT HEALTH VISITORS' ASSOCIATION.

Working in association with the Public Health Department is the Glasgow Infant Health Visitors' Association, to whom are reported children whom it is desirable to keep under observation during a longer period than is possible by the official visitors. The number of visitors fluctuates around 300.

As the period of visitation generally extends over the first twelve months of life, a complete year must elapse before the results of the visitation can be summarised.

The following is a summary of the results for the years 1925-1928:—

Year.	Year old.	Removed.	Dead.	Ceased to be Visited.	Visits Un-necessary	No In-formation	Visits Resented	No Visitor.	Total.
1925	2,259	242	224	26	18	6	4	2	2,781
1926	1,685	249	161	21	14	5	7	4	2,146
1927	1,717	244	225	5	10	1	6	2	2,210
1928	1,818	326	209	6	6	3	1	—	2,369

### DOMESTIC HELPS.

Since the scheme for supplying Home Helps was inaugurated in Glasgow towards the end of 1924, there has been an increasing demand for their services. In the first year there were only 17 applications, while in 1929 the total had reached 195, which is an increase of nearly 50 per cent. on the number assisted during 1928. The scale of payment is 5s. per day, which is guaranteed by the Corporation. Assistance of this kind for those who can pay this rate is arranged privately, and is not included in the records shown below. Quite a number are being placed in this way as the scheme becomes better known.

Payment for the services of helps is in accordance with a scheme of "necessitousness" based on the scale applicable to grants of milk and meals under the Child Welfare Scheme, with a minimum charge of one shilling per day. The following is a summary of the payments made for services rendered:—

Cases.	Number of Days Attended.	Rate per Day.	Amount Paid by Patient.
85	1,235	1/-	£61 15 0
36	435	1/6	32 12 6
32	379	2/-	37 18 0
20	224	2/6	28 0 0
9	67	3/-	10 1 0
10	96	3/6	16 16 0
3	40	4/-	8 0 0
1929, 195	2,476		£195 2 6
1925, 17	246		£18 11 6
1926, 107	1,407		102 2 6
1927, 118	1,361		105 8 6
1928, 132	1,656½		129 11 6

During 1929, 44 individual helps attended 195 cases for a total of 2,476 days, or an average of 12½ days per case. The amount recovered in fees was £195 2s. 6d. The helps are remunerated at the rate of 5s. per day, so that the balance falling to be met by the Corporation was £423 17s. 6d.

### MATERNITY BUNDLES.

In connection with the Child Welfare movement a very definite need has been met by the issue of maternity bundles, and in accordance with the practice of recent years these are not issued until the birth actually takes place, as in necessitous cases to which they are issued,

it was found that quite frequently the garments supplied were misused. In 1929 bundles, or part bundles, to the number of 441 were supplied, compared with 428 in 1928 and 335 in 1927. Receipts from those who could make a part payment amounted to £15 12s., as against £19 14s. 6d. received from this source during the preceding year.

### DAY NURSERIES.

Including the Phoenix Park Kindergarten, there are, as in previous year, six Centres with nursery accommodation. The total attendances of children at these Centres during 1929 was 37,012, in comparison with 35,992 during the previous year.

The following figures show the number of attendances, &c., at each Centre during the year:—

Nursery.	Number of Days open.	Total Attendances during the year.	Average.	Maximum number in one day.	Accommo- dation for.
Bridgeton, ... ..	242	7,459	31	38	40
Cowcaddens, ... ..	251	7,078	28	34	36
Phoenix Park Kinder- garten, ... ..	187	5,024	27	31	31
Milton, ... ..	234	6,684	29	40	38
Hutchesontown, ... ..	251	6,404	26	35	38
Kingston, ... ..	220	4,363	20	29	30

The total accommodation at the Day Nurseries and Kindergarten is for 213 children, and 130 are waiting admission. Accommodation for similar cases is also provided by the Education Authority for children between three and five years of age in some 20 schools throughout the City, at which the total attendance is about 140, although in a few instances there is only one child on the roll. These children are usually members of families attending the school, where the mother goes out to work.

There was less difficulty during the year with regard to infectious disease, although measles and whooping-cough was prevalent in the City. At Cowcaddens no case of infectious disease occurred, while the average improvement in physique, clothing, feeding, &c., of the children was very marked. The attendance at this centre was higher notwithstanding the fact that quite a number of families left owing to their transfer to rehousing schemes from slum property in Cowcaddens district.

The Kindergarten has been continued under the voluntary superintendence of Miss Winifred M. Anderson, who submits the following report:—

*Phoenix Park Kindergarten.*—The highest attendances during the year were in the months of September and October. These have not been equalled since November, 1927. In both of these months 20 children out of the 31 were present without missing a day. During the year several children have had tonsils and adenoids removed, and their health has improved in consequence; others have received dental treatment. There have been a few cases of measles, chickenpox



and whooping-cough in the course of the year, but all have made good recoveries.

As usual, the children spend a fortnight in June at Hillside Home, Clynder, and those in need of a longer change have been to the Home in the school holidays. There has been a remarkable improvement in the health of several rickety children, who have put on weight steadily and rapidly, and at the same time have greatly increased in energy and vitality. The mothers and neighbours have been amazed at the change in these children. There have been several cases also of children of nervous, unstable temperament, who are now able to rest quietly in the open air and to concentrate on various occupations. The mental condition of the children we have had during the year has varied from backward and very dull at the one extreme, to very superior intelligence at the other.

A number of Froebel students from the Provincial Training College have spent two days a week in the Kindergarten for four or six weeks for observation and practice in a nursery school. Three play centres have been held weekly in the two winter terms for kindergarten children who are now at school, and one monthly.

### JUVENILE UNEMPLOYMENT CLASSES, &c.

The arrangement whereby girls from the Juvenile Unemployment Classes attend at certain of the Day Nurseries for training purposes was continued during the year. Each girl receives training in the general care of infants, and in laundry and kitchen work, over a period of one month; and the results of training, as furnished by the reports of the matrons, are shown below:—

#### *Training Completed—*

Work Satisfactory, ... ..	54
Work Unsatisfactory, ... ..	—
	<hr/> 54

#### *Training not Completed—*

Left to take up employment, ... ..	9
Attained 18 years and ceased to attend Juvenile Un- employment Classes, ... ..	—
Illness, ... ..	1
Other reasons (mainly unsuitability for the work), ... ..	3
	<hr/> 13
	<hr/> 67
	<hr/>

Training was also given at the Day Nurseries to 21 pupils of the College of Domestic Science.

### COUNTRY HOMES.

No alteration has taken place in the accommodation of the three country homes at Mount Vernon, Scotstoun and Mount Blow, while the agreement with Sir Archibald Campbell, who has placed at the disposal of the Corporation for the treatment of debilitated mothers

with young infants, the Garscube Cottage Hospital, to which he makes an annual grant of £300, has been continued. During 1929 it was not found necessary to utilise any part of the accommodation at these homes for the transfer of debilitated children who had recovered from measles, whooping-cough and pneumonia, &c., in the various hospitals, as was the case during the preceding year.

The following analysis shows that 435 children were admitted under the Child Welfare Scheme to the three Country Homes during the year, the two principal reasons for admission being rickets and malnutrition:—

	Mount Vernon.	Scots- toun.	Mount Blow.	Total.
Rickets, ... ..	68	36	62	166
General Malnutrition, and Debility, ... ..	18	78	64	160
Bronchitis, ... ..	5	13	4	22
Debility after acute illnesses,	1	—	25	26
Anæmia, ... ..	34	6	4	44
Nervousness, ... ..	—	6	3	9
Others, ... ..	—	8	—	8
	126	147	162	435

The dismissals during the year were 116 from Mount Vernon, 126 from Scotstoun, and 164 from Mount Blow. The condition on dismissal is summarised in the following statement:—

	Mount Vernon.	Scots- toun.	Mount Blow.	Total.
Much improved, ... ..	81	113	95	289
Not improved, ... ..	—	—	—	—
Parents leaving City, ...	—	4	2	6
Transferred suffering from infectious disease, ... ..	11	—	21	32
Taken home by parents (fretting, &c.), ... ..	3	8	18	29
Died, ... ..	—	—	—	—
For admission to other In- stitutions, ... ..	—	1	—	1
Sent home, ... ..	—	—	1	1
Contacts with cases of Infec- tious Disease sent home,	21	—	27	48
	116	126	164	406

Of the total, 406, discharged from Country Homes during the year, 289 were much improved, while 32 were transferred suffering from infectious disease, and 48 others dismissed as contacts with these. During the preceding year the respective figures were 247 much improved, 35 transferred with infectious disease, and 104 sent home as contacts.

*Garscube Cottage Hospital.*—The arrangement whereby this Home was taken over for the purpose of giving debilitated mothers with young children an opportunity of recuperating their health by a fortnight's rest has been continued. During the year, 185 mothers with 186 infants were admitted, while dismissals numbered 188 mothers and 189 infants. Of the total, 109 completed fourteen days' residence, while 12 others were kept in for a few days longer; the remainder (64) left before the end of the fortnight, mostly for domestic reasons.

#### MIDWIVES' AND MATERNITY HOMES ACT, 1927.

During the year seven applications for registration of premises as Maternity Homes were granted by the Local Supervising Authority, one of these being in respect of a home previously exempted, and another in respect of a removal to new premises.\* Six homes were removed from the register; in one case the keeper had died, in another the keeper had removed to new premises, while the remaining four had given up the work.

The number of maternity homes on the Register at 31st December is therefore as follows:—

	Registered.	Exempted.
Maternity Hospitals, ... ..	2	—
General Infirmarys and Hospitals, ...	—	5
Nursing and Maternity Homes, ...	46	3
	<hr/> 48	<hr/> 8

#### MIDWIVES (SCOTLAND) ACT, 1915.

During 1929 there was a decrease of fourteen in the number of midwives who notified their intention to practise, leaving 275 on the roll. Of these 177 are entitled to registration by examination, and 98 as having been in practice in December, 1914—a decrease of four in the former class, and 10 in the latter. Other changes are as follows—two died; one went to U.S.A.; five left Glasgow. Sixteen midwives notified their intention to practise for the first time, 13 of these being certified “by examination,” and three were on the roll as being in practice in 1914—these three were county midwives who attended an odd case in the Glasgow area. The difference in numbers is accounted for by midwives, mostly working as monthly nurses, who have ceased to notify intention to practise.

The total number of births during the year is lower by about 850, and notifications by midwives are fewer by nearly 500. Among midwives' cases there was an increase in the number of deaths of infants under ten days from 193 to 214, bringing their numbers for the first time to a higher figure than those attended by doctors. The cause of this increase is not apparent.

Puerperal fever statistics are complicated this year by the coming into force of the Pyrexia Notification Order on 1st October. Many

less severe cases have come to the notice of the Department, as patients who had more than two days' temperature unexplained by other causes than sepsis are included in the figures. This explains the increase from 16.5 to 21.2 per 1,000 births. There is a small increase in the number of deaths per 1,000 births from 3.8 to 4.2. These figures can only be approximate on account of the large number of abortion cases which develop septic complications. The numbers of these for the last four years are as follows:—

					Puerperal Fever.	
					Total Cases.	Abortions.
1926, ...	...	...	...	...	319	53
1927, ...	...	...	...	...	277	53
1928, ...	...	...	...	...	414	52
1929, ...	...	...	...	...	516	78

Only 11 cases this year have been without skilled attention at birth, as far as is known: eight of these were foundlings (seven dead); one was alive when found, but died of bronchial pneumonia after two weeks; one was a concealed pregnancy, which was quickly removed to a Parish hospital; and one was a premature labour (doctor engaged), where the girl was alone in the house, and the baby was dead before assistance could be obtained. Only one was attended by a known handy woman, who was seen and rebuked.

Three midwives were reported to the Board towards the end of the year, but the hearing of these cases by the Board was delayed till 1930.

The maternity homes kept by midwives continue to be very fairly satisfactory. Lack of education makes it very difficult for most of these women to keep satisfactory records, and in some cases it is impossible to get more than a fairly filled case sheet. The problem of an outbreak of sepsis in one of these homes is a difficult one. Outbreaks of this sort occurred in two of the best of these homes, and before the trouble was stamped out three separate disinfections were done in each case, although every suggestion made regarding disinfection seemed to be faithfully carried out.

The most serious of these outbreaks, which was responsible for two maternal and two infant deaths, the latter from septic peritonitis, seemed to have originated in an unnotified case of puerperal pyrexia. The new Order on this subject should obviate a similar recurrence.

The following table summarises the numbers for the year, with relative figures for the two preceding years:—

	1927	1928	1929
Midwives in Practice during year, ...	292	289	275

#### THE QUALIFICATIONS FOR CERTIFICATION UNDER

ACT, HELD BY THE FOREGOING WERE—

In Practice, December, 1914, ...	115	108	98
C.M.B. (Scotland) Examination, ...	130	137	136
Other recognised qualifications, ...	47	44	41

In the following table some indication is afforded of the number of births attended during the year by individual midwives. It would seem that of the 9,740 births attended by midwives, 7,341 occurred in the practice of midwives with 50 confinements or more in the year:—

#### BIRTHS NOTIFIED BY MIDWIVES.

		1927	1928		1929	
			Births.	Midwives.	Births.	Midwives.
Under 50 Notifications, ...		2,542	2,507	160	2,399	153
50-100	..	3,038	3,357	48	3,423	49
100-200	..	3,801	3,678	26	3,252	24
200-300	..	1,170	727	3	666	3
		10,551	10,269	237	9,740	229

#### STILL-BIRTHS NOTIFIED BY MIDWIVES.

Notifications.			Midwives.			Still-Births notified.		
			1927	1928	1929	1927	1928	1929
1-5,	...	...	108	108	117	233	222	226
6-10,	...	...	6	5	6	41	37	41
10+	...	...	—	—	1	—	—	12
			114	113	124	†274	‡259	§279

Percentage of Births attended	...	...	2.6	2.6	2.5
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†In 81 cases, Doctors assisted.

‡In 80 " " "

§In 93 " " "

The figures in the two following summaries contain records of ophthalmia occurring in the practice of midwives, so that the numbers are not the same as the actual cases referred to in other sections of this Report:—

#### CASES OF OPHTHALMIA NEONATORUM OCCURRING IN PRACTICE OF MIDWIVES.

Notifications.			Midwives.			Cases notified.		
			1927.	1928.	1929.	1927.	1928.	1929.
1-5,	...	...	83	80	75	180	166	173
6-10,	...	...	14	18	17	101	129	127
11-15,	...	...	4	6	7	55	77	87
16-20,	...	...	2	1	—	34	16	—
21-25,	...	...	2	2	1	45	47	22
Over 25,	...	...	—	—	—	—	—	—
			105	107	100	415	435	409

Percentage of Births attended,	...	4.5	3.9	4.2
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## CASES OF PUERPERAL FEVER OCCURRING IN PRACTICE OF MIDWIVES.

	Midwives.			Cases.		
	1927	1928	1929	1927	1928	1929
1 Case, ... ..	43	53	45	43	53	45
2 Cases, ... ..	12	17	23	24	34	46
3 „ ... ..	3	5	5	9	15	15
4 „ ... ..	2	2	2	8	8	8
5 „ ... ..	1	2	2	5	10	10
	61	79	77	89	120	124

## NUMBER OF REQUESTS FOR ASSISTANCE TO MEDICAL PRACTITIONERS IN CASES OF EMERGENCY UNDER RULE.

Notifications.	Midwives.			Requests made.		
	1927	1928	1929	1927	1928	1929
Under 10, ... ..	106	97	100	427	400	404
„ 20, ... ..	47	51	42	641	666	571
„ 30 ... ..	20	19	27	477	424	659
„ 40 ... ..	10	13	13	354	432	455
„ 50, ... ..	8	5	3	344	235	131
Over 50, ... ..	4	6	4	225	339	229
	195	191	189	2,468	2,496	2,449

During the year there were 2,449 occasions on which medical help was called by midwives, which represents 25 per cent. of the total births occurring in the practice of midwives, and compares with 24 per cent. in 1928 and 23 per cent. in 1927. Details of the nature of emergency are not given this year, but the following indicates the period during which medical assistance was called:—

## NATURE OF EMERGENCY.

	1927	1928	1929
In all cases in which a woman during pregnancy, labour, or lying-in appears to be dying or is dead, ... ..	3	1	2
PREGNANCY.—In cases of a pregnant woman, where there is any abnormality or complication, ... ..	131	106	141
LABOUR.—In the case of a woman in labour at or near term, when there is any abnormality or complication, ... ..	1,607	1,682	1,598
LYING-IN.—In the case of a lying-in woman, when there is any abnormality or complication, ... ..	259	288	269
THE CHILD.—In the child, when there is any abnormality or complication, ... ..	452	404	421
Cannot be classified, ... ..	16	15	18
Total, ... ..	2,468	2,496	2,449

DEATHS (NOTIFIED BY MIDWIVES) BEFORE A			
DOCTOR WAS IN ATTENDANCE, ...	2 mothers, 16 infants;		
LAYING OUT THE DEAD, ... ..	5 adults, 7 infants;		
ARTIFICIAL FEEDING, ... ..	17 Notifications.		

#### INTIMATION OF EXPOSURE TO INFECTION.

DISEASES,	1927	1928	1929
Puerperal Fever, ... ..	59	90	108
Measles, ... ..	11	6	10
Scarlet Fever, ... ..	11	5	2
Diphtheria, ... ..	6	3	2
Pneumonia, ... ..	4	8	6
Erysipelas,... ..	2	1	3
Enteric, ... ..	—	—	—
Chickenpox, ... ..	5	2	3
Others, ... ..	5	4	6
	103	120	140

*Fees to Doctors in Emergency Cases.*—In the following table the total amount of accounts for the year ending November is shown, that being the period at which doctors' accounts are made up:—

Year ended November, 1922, ... ..	£2,040 7 0
Do. do., 1923, ... ..	1,829 17 0
Do. do., 1924, ... ..	1,229 0 0
Do. do., 1925, ... ..	1,416 18 0
Do. do., 1926, ... ..	1,610 4 6
Do. do., 1927, ... ..	1,456 11 6
Do. do., 1928, ... ..	1,632 5 0
Do. do., 1929, ... ..	1,711 0 6

The practice of issuing accounts with the object of recovering some part of the fee, which was begun as from June, 1922, has been continued, and during the past year £430 10s. 6d. has been so recovered, while £26 16s. 0d. was withdrawn from medical practitioners' accounts, and accounts for £18 1s. 6d. were deleted.

#### OPHTHALMIA NEONATORUM.

During the year 1929, 639 cases of ophthalmia neonatorum were notified, compared with 692 in 1928 and 652 in 1927. These numbers represent rates of 28·0, 29·2, and 27·3 respectively of all births regis-

tered. Particulars of these years are given in the following table, according to attendance at birth, which would seem to indicate that a greater number of cases were reported by nurses and midwives.

### OPHTHALMIA NEONATORUM CASES AND CASE-RATES PER 1,000 BIRTHS.

Notified by	Year	Cases.			Rates.*		
		1927	1928	1929	1927	1928	1929
Doctors, ...	...	33	40	43	4.8	6.0	6.9
Institutions, ...	...	46	73	73	14.1	20.6	21.0
Inst. Nurses, ...	...	154	145	111	45.4	40.8	30.5
Midwives, &c. ...	A.	417	434	412	40.4	43.7	43.4
Number Registered, ...	...	650	692	639	—	—	—
Removed, ...	...	—	—	—	—	—	—
Beyond Boundary, ...	...	2	—	—	—	—	—
Total Cases of Ophthalmia Neonatorum,		652	692	639	27.3	29.2	28.0

\* Calculated on Live Births notified. "Doctors found in attendance" are included in "Doctor in attendance," and deducted from "Midwives," &c.

Of the total cases, 55 of the more severe type were removed to hospital, and the others were treated at home or at Child Welfare Centres by the nurses, who made 3,737 visits in this respect.

The period at which symptoms appear is given in the following summary, which shows considerable uniformity with regard to the interval after birth at which ophthalmia develops:—

Cases occurring at Age—				1927	1928	1929
- 12 hours,...	...	...	...	47	56	72
- 4 days, ...	...	...	...	234	245	206
- 8 ,, ...	...	...	...	215	250	242
+ 8 ,, ...	...	...	...	154	141	119
				650	692	639

*Association with Syphilis.*—Swabs of the discharge from eyes are obtained from as many cases as possible for examination for gonococcus, and the results are shown in the following table, together with information as to association with clinical syphilis, verified by bacteriological tests or otherwise. Of the swabs examined for gonococcus only, about 7.2 per cent. proved positive, against 11 per cent during the preceding year.

Among the gonococcal cases four were associated with syphilis.

	GONOCOCCAL.			NON-GONOCOCCAL.			UNCLASSIFIED.			TOTAL.		
	Total Cases.	Syphilis present.	Per cent. with Syphilis.	Total Cases.	Syphilis present.	Per cent. with Syphilis.	Total Cases.	Syphilis present.	Per cent. with Syphilis.	Total Cases.	Syphilis present.	Per cent. with Syphilis.
1927,	47	2	4.3	364	1	0.3	239	—	—	650	3	0.5
1928,	50	2	4.0	393	2	0.5	249	—	—	692	4	0.6
1929,	30	4	13.3	386	—	0.0	223	—	—	639	4	0.6

Despite the reduction in the number of births during recent years, the cases of Ophthalmia Neonatorum notified remain at the high level between 600 and 700. On the other hand, it is satisfactory to note that in only 30 instances was the gonococcus present as against 50 during 1928. The number of cases of Gonococcal Ophthalmia represents a rate of 1.3 per thousand of all births during 1929, compared with 2.1 in 1928. In 1919 the rate was 10.34.

*Gonococcal Cases.*—The results of treatment in this group are not so satisfactory as, of the 30 cases referred to above, three had corneal scars remaining after treatment with impaired sight, one of the cases being infected with syphilis, but there was only one death (a syphilitic child) as against seven deaths in 1928.

*Non-Gonococcal Cases.*—In this group of 386 cases all with the exception of two who died, and one who removed, recovered with no corneal scar remaining.

Result.		1927		1928		1929	
		No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.
GONOCOCCAL—							
No Corneal Scar,	...	41	2	40	2	24	2
Corneal Scar remaining							
In one eye—							
Sight not impaired,		—	—	1	—	—	—
„ impaired,	...	—	—	—	—	2	1
Blind,	...	—	—	—	—	—	—
In both eyes—							
Sight not impaired,		—	—	—	—	—	—
„ impaired,	...	—	—	—	—	—	—
Blind,	...	—	—	—	—	—	—
Removed,	...	—	—	—	—	—	—
Died,	...	4	—	7	—	—	1
		45	2	48	2	26	4

Result.	1927		1928		1929	
	No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.
NON-GONOCOCCAL—						
No Corneal Scar, ...	358	—	386	1	383	—
Corneal Scar remaining						
In one eye—						
Sight not impaired,	1	—	—	—	—	—
„ impaired, ...	1	—	—	—	—	—
Blind, ...	—	—	—	—	—	—
In both eyes—						
Sight not impaired,	—	—	—	—	—	—
„ impaired, ...	—	—	—	—	—	—
Blind, ...	—	—	—	—	—	—
Removed, ...	—	—	2	—	1	—
Died, ...	3	1	3	1	2	—
	363	1	391	2	386	—
UNCLASSIFIED—						
No Corneal Scar, ...	239	—	248	—	223	—
Died, ...	—	—	1	—	—	—
Removed, ...	—	—	—	—	—	—
	239	—	249	—	223	—
Total, ...	647	2	688	4	635	4

### PUERPERAL FEVER.

The following table summarises the cases and mortalities, &c., during the past seven years:—

	Cases.	Deaths.	Case Mortality per cent.	Cases per 1,000 Births.	Deaths per 1,000 Births.	Erysipelas death-rate per million.
1921,	321	72	22·4	10·8	2·4	61
1922,	294	94	32·0	10·4	3·3	60
1923,	278	72	25·9	10·4	2·7	42
1924,	239	61	25·5	9·5	2·4	44
1925,	300	68	22·7	11·8	2·3	42
1926, (old City),	307	69	22·5	12·6	2·8	45
1927,	277	61	22·0	11·7	2·6	26
1928,	413	89	21·5	17·5	3·8	33
1929,	516	86	16·7	22·6	3·8	45



In the Annual Reports prior to 1914 a table was published comparing the puerperal case rates and death rates, &c., with those for erysipelas, and there then appeared to be little association between them. With the prominence now attached to maternal mortality, and the increasing number of cases registered as puerperal fever, this comparison is again introduced. The death rates from erysipelas are shown in the last column, and it would appear that there is a small though variable relationship. For instance, the low death rate from erysipelas in 1927 corresponds with a low incidence of puerperal fever, while there were higher incidences of the two diseases in 1922, 1928 and 1929. In order to ascertain whether this association is more definite, the mortality from erysipelas of women of child-bearing ages, 15-45 is also given with the same age distribution for males and for both sexes between 45 and 75 years of age. Any suggestion of association is not any more decided; males and females between 15 and 45 years are, for the years given, almost identical on averaging the rates, while at the older ages the male death rate from erysipelas is ten times and the female about nine times the respective figures for younger ages.

#### SEXES AND AGE CLASSIFICATION OF DEATH-RATES FROM ERYSIPELAS.

Years.	15-45 Years.		45-75 Years.	
	Females.	Males.	Females.	Males.
1921, ... ..	22	28	158	122
1922, ... ..	18	16	166	130
1923, ... ..	22	4	78	121
1924, ... ..	18	12	95	103
1925, ... ..	7	12	86	137
1926, ... ..	4	20	103	153
1927, ... ..	—	4	67	83
1928, ... ..	7	4	66	172
1929, ... ..	14	11	122	164

An analysis of the ward rates per 1,000 births for puerperal fever cases, and deaths, other diseases and accidents of pregnancy and parturition, deaths of infants from congenital debility, premature birth, &c., and cases of ophthalmia neonatorum, does not seem to suggest any very definite association. Some good and some poor wards show high puerperal fever case rates and death rates, while other wards in both groups have low rates. The puerperal fever rate per 1,000 births in Pollokshields, one of the best wards, is 2.9 and the death rate 2.9, while in Calton, one of the worst wards, the corresponding figures are 8.7 and 1.1. The case rate of the latter may be affected by the number of confinements in the Maternity Hospital, but the death rate is not affected, as the deaths are referred back to the ward. In Partick West the puerperal fever rate is 33.3 and the death rate 8.3, compared with 5.7 and 1.9 respectively in Partick East.

The ward rates for ophthalmia neonatorum do not suggest any more definite association with puerperal sepsis than that the incidence of this affection showed greater variation in the wards, poor wards having higher rates and good wards lower rates generally than the average of the City. This confirms the experience of the Women's Hospital where venereal diseases are treated. Few cases of puerperal fever occur in connection with cases treated there.

Congenital debility, malformation, and premature births do not apparently cause lowered resistance to attack by puerperal fever. As a matter of fact, the immaturity death rates in the wards are remarkably constant around the City average of about 37, even in the best wards, while the poor wards, as often as not are below the City average. The puerperal rates, as already mentioned, show considerable variation.

The increase in the case rate per 1,000 births to 22·6, which is more than double the rates of recent years, with the exception of that for 1928, is due to the mild cases now included in the total registered owing to the notification of puerperal pyrexia cases which were formerly missed. With all these oscillations due to differing standards of notification and classification, &c., the death rate probably remains the best record for comparison over a period of years. In 1929 the rate was 3·8, the same as that of 1928, and both rates are considerably heavier than those of recent years.

In the pre-war table already referred to, the puerperal death rates between 1891 and 1913 varied between 60 and 70 per million of the population, while the comparative rate in 1929 was 74. The highest ward death rates were 164 in Woodside, 154 in Kingston, and 147 in Partick West.

The following table gives an analysis of the cases and deaths during 1929 in relation to the attendance at birth. Similar information has been given in recent Annual Reports, and for convenience of reference the principal percentages for 1927-9 are here summarised.

			Doctor.	Midwife.	Maternity Hospital. Indoor.	Outdoor.
<i>Cases per 1,000 Births—</i>						
1927, ...	...	...	14·6	8·4	8·8	8·9
1928, ...	...	...	16·9	11·7	8·7	26·4
1929, ...	...	...	21·1	12·7	13·6	51·0
<i>Deaths per 1,000 Births—</i>						
1927, ...	...	...	2·7	1·7	1·7	4·7
1928, ...	...	...	3·8	2·1	7·9	1·7
1929, ...	...	...	4·0	2·5	15·0	1·3
<i>Case Mortality per cent.—</i>						
1927, ...	...	...	18·3	20·2	19·4	54·2
1928, ...	...	...	22·4	18·3	30·0	19·4
1929, ...	...	...	19·1	19·4	29·4	9·8

## PUERPERAL SEPSIS, 1929.

## CASE RATES AND DEATH RATES ACCORDING TO ATTENDANCE AT BIRTH.

	Total Cases.	Cases per 1,000 Births.	Deaths.	Deaths per 1,000 Births.	Case Mortality per cent.
Doctors, ... ..	*136	21.1	26	4.0	19.1
Midwives, ... ..	†124	12.7	24	2.5	19.4
Maternity Hospital (Indoor) ...	126	51.0	37	15.0	29.4
"    "    " (Outdoor), ...	51	13.6	5	1.3	9.8
Parish Hospitals—					
Stobhill, ... ..	21	23.2	—	—	—
Duke Street, ... ..	10	38.9	1	3.9	10.0
Crookston, ... ..	1	66.7	—	—	—
Govan Maternity Cottage Hospital,	12	39.7	2	6.6	16.7
Confin'd outside City, per Glasgow					
institutions, ... ..	8	—	2	—	—
No one (abortions), ... ..	23	—	3	—	—
Others (infirmaries, fever hospitals,					
&c.), ... ..	4	—	2	—	—
Total, ... ..	516	21.2	102	4.2	19.8

\*In 21 cases assisted by midwives, in 9 by district nurses.

†In 33 cases assisted by doctors.

Note.—The percentage per 1,000 births can only be approximate, as a large number of puerperal cases follow abortion, the number of which is unknown.

*Puerperal Pyrexia Regulations.*—As from 1st October, 1929, regulations made by the Department of Health for Scotland came into force requiring the notification of all cases of puerperal pyrexia, in addition to the former provision requiring the notification of puerperal fever. The regulations defined puerperal pyrexia as “any febrile condition (other than a condition which is required to be notified as puerperal fever under the Infectious Diseases (Notification) Act, 1889) occurring in a woman within 21 days after child-birth or miscarriage in which a temperature of 100.4° F. (38° C.) or more has been sustained during a period of 24 hours, or has recurred during that period.” The obligation is thus laid on medical practitioners to notify all cases of pyrexia during the puerperium irrespective of the cause to which fever may be attributed, and so securing adequate treatment in the early stages of puerperal infection.

In order to give effect to the provisions of the regulations arrangements were approved by the Health Committee for enabling practitioners to obtain a second opinion in doubtful or difficult cases, and a panel consisting of 12 recognised consultants was set up, whose services were available on application being made therefor to the Medical Officer of Health, and to whom a fee of three guineas was paid for each consultation, and a report thereon. Arrangements were also made for bacteriological examinations of swabs, &c., and, of course, hospital facilities were available for such cases as it should be decided required indoor treatment. It was not regarded as necessary to make arrangements for the home nursing of cases, as it was deemed that such cases could best be treated in hospital.

From 1st October until the end of the year the services of the consultants were requested in connection with eleven cases, six of which were removed to Belvidere Hospital for treatment, where two deaths occurred.

#### REFRESHER COURSE FOR HEALTH VISITORS.

At the request of the Department of Health for Scotland, a refresher course for Health Visitors was held here from 29th April to 9th May, 1929, particulars of which were published in a circular issued by the Department on 5th April.

Lectures were given in the lecture hall at the City Chambers, 20 Cochrane Street, and demonstrations were arranged at the various centres. Opportunities were given for each of the nurses attending the course taking part in all the work specified in the syllabus, the amount of practical work being only limited by the time available. In all, 34 nurses attended the course, 15 of whom were members of the Tuberculosis and Child Welfare nursing staffs of the Department, and 19 were from outside authorities and nursing associations, mostly in the south-west of Scotland.

Lectures were given by Professors Leonard Findlay and James Hendry, and by Drs. John Hewitt, W. Herbert Brown, Hugh Mackay, and Charles M'Cartney, while two lectures on "Psychology of the Child," were given by Dr. Shepherd Dawson of the Education Authority. Other lectures were undertaken by Dr. Arbuckle Brown of the Education Authority, and by medical members of the staff of this Department and at the hospitals.

## SECTION IV.

## INFECTIOUS DISEASES.

The number of cases of the various infectious diseases registered during 1929, and the number treated in Local Authority Hospitals and other institutions, are given in the Appendix Table XVII; the seasonal prevalence of each is shown in Table XIX, which gives the numbers registered during each month of the year.

For purposes of comparison, the rates for each disease per million of the population, along with the rates for the preceding four years, are given in Table XVIII. of the Appendix. The rates for the principal diseases which have been notifiable over a considerable period are summarised in the following table from 1913 onwards.

GLASGOW.—CASE-RATE PER MILLION OF THE POPULATION FOR ALL CASES OF INFECTIOUS DISEASES REGISTERED SINCE 1913.

YEAR.	Typhus Fever.	Enteric Fever.	Continued and Undefined.	Puerperal.	Smallpox.	Scarlet Fever.	Diphtheria and Membranous Croup.	Cerebro-spinal Fever.	Phthisis.	Non-Pulmonary Tuberculosis.	All Others.	TOTAL.
1913,	39	232	7	144	...	4,005	1,934	35	2,552	...	26,247	35,195
1914,	18	340	7	206	...	5,337	1,440	45	2,284	1,088*	21,675	32,440
1915,	9	248	5	175	...	5,973	1,257	167	2,169	1,375	25,389	36,667
1916,	17	158	8	178	...	3,719	1,220	131	2,285	1,270	17,001	25,987
1917,	1	82	4	148	...	1,634	1,146	75	2,435	1,433	27,005	33,963
1918,	49	128	12	151	1	1,193	1,379	67	2,258	1,273	16,045	22,556
1919,	30	103	8	163	5	2,443	1,626	72	1,834	1,083	21,359	28,726
1920,	8	204	13	267	477	3,378	1,809	76	2,009	1,062	25,509	34,813
1921,	6	100	7	299	19	3,272	1,727	56	1,902	1,061	23,965	32,414
1922,	18	79	6	272	...	3,212	1,561	62	1,806	970	31,419	39,405
1923,	2	116	20	255	...	3,277	1,623	59	1,584	1,133	25,453	33,522
1924,	...	75	17	216	2	2,905	1,733	60	1,669	1,114	30,259	38,050
1925,	...	40	8	273	...	3,472	1,581	56	1,457	1,016	30,959	38,862
1926,†	7	91	4	279	...	4,252	2,082	60	1,572	907	31,430	40,684
1927,	...	131	4	245	...	3,641	2,685	70	1,435	974	30,870	40,055
1928,	...	51	3	360	...	2,822	2,293	89	1,503	965	27,895	35,981
1929,	...	73	4	445	19	2,890	1,825	175	1,554	855	27,061	34,901

\* Non-pulmonary tuberculosis made compulsorily notifiable, July, 1914.

† Rates for 1926 are for City area before extension.

Typhus fever was again absent, but a number of cases of smallpox occurred in connection with an outbreak on board a passenger liner which is referred to later. The enterica group of diseases has again shown a slight recrudescence, the rate per million of the population



in 1929 being 73, compared with 51 for the preceding year and 131 in 1927. These rates are low, however, in comparison with those for pre-war years. Puerperal fever was dealt with in a previous section of this report.

The rate for scarlet fever, 2890, shows a small increase over that of 1928. The reduction since the heavy incidence in 1926 has probably been too rapid, so that it is not surprising that the decline has been arrested, especially as the rate has now approached what may be regarded as a normal minimum. Diphtheria was again definitely less prevalent, the rate, 1825 in 1929, comparing favourably with 2293 in 1928. The comparatively high incidence of cerebro-spinal fever has been one of the epidemiological features of the year, the number of cases registered being equivalent to a rate of 175 per million, which has not been exceeded since pre-war years.

#### DISEASES FORMERLY CALLED "PRINCIPAL ZYMOTIC DISEASES."

The death-rates for several periods have been :—

1881-90,	3·600	per 1,000 living.	1922,	1·997	per 1,000 living.
1891-1900,	3·282	"	1923,	1·457	"
1901-1905,	2·660	"	1924,	1·702	"
1906-1910,	2·450	"	1925,	1·245	"
1911-1915,	2·424	"	1926,	1·233	"
1916-1920,	1·607	"	*1927,	1·127	"
1921,	1·116	"	1928,	1·204	"
			1929,	·820	"

\* Diarrhoea over 2 years excluded.

In this comparison only those infectious diseases that have been notifiable for most of the period given are included.

#### SMALLPOX AND VACCINATION.

Between 5th and 22nd April, 15 cases of smallpox were removed to hospital, subsequent to the arrival of the *S.S. Tuscania* from India. A full report on this occurrence will be found in Section IX. dealing with the work of the Port Local Authority.

*Vaccination.*—The total number of infants vaccinated at clinics held at the Child Welfare Centres in the various districts of the City was 2,307 compared with 2,539 in 1928. The greatest reduction took place at Bridgeton Centre, which to some extent is accounted for by the lower numbers attending the consultation at that centre. Decreases also occurred at Shettleston, Garngad, Port Street and Govan.

The following table shows the numbers of children vaccinated at the various Centres during the past three years:—

STATEMENT SHOWING NUMBER OF INFANTS VACCINATED AT THE CHILD WELFARE CONSULTATIONS DURING THE YEARS 1927-1929.

Centre.	1927.	1928.	1929.
Public Health Office, ...	465	408	444
Garngad, ... ..	72	88	55
Port Street, ... ..	85	131	97
Maryhill, ... ..	176	189	190
Govan Town Hall, ... ..	96	128	100
Adelphi Street, ... ..	215	258	244
Partick, ... ..	101	123	116
Weir Street, ... ..	75	118	125
Bridgeton, ... ..	750	725	602
Shettleston, ... ..	130	246	207
Cowcaddens, ... ..	28	19	10
Elder Hospital, ... ..	103	82	102
Yoker, ... ..	9	—	—
Springburn, ... ..	46	24	15
	<u>2,351</u>	<u>2,539</u>	<u>2,307</u>

VACCINATION (SCOTLAND) ACT, 1907.

The following shows the number of declarations of conscientious objection to vaccination made each year since the Act came into operation:—

1907-10 (annual average), 2,119	1926 ... ..	5,485
1911-15                    ,,       5,922	1927 ... ..	5,254
1916-20                   ,,       6,182	1928 ... ..	5,560
1921-25                   ,,       5,318	1929 ... ..	5,949

The number of conscientious objections to vaccination made during the year was 5,949, which is equal to 26 per cent. of the total births registered. This compares with 24 and 22, the respective percentages for the years 1928 and 1927. Declarations of conscientious objection were made in respect of nearly half the births in Fairfield and Pollokshaws wards, where the percentage of objections was 48. Other high percentages were 41 in Cowlairs and 40 in Govan. The lowest number of exemptions occurred in Langside, with 13 per cent., followed by 14 per cent in Kelvinside. Particulars of the other wards are contained in Appendix Table XXII.

The following abridged table indicates the percentages before the Conscientious Objection Act came into operation and for the year 1914, when the lowest percentage of successful vaccinations was

reached, namely 51·7. Within recent years there has again been a tendency towards reduction.

TABLE SHOWING RESULTS OF PRIMARY VACCINATION OF CHILDREN BORN DURING SEVERAL YEARS.

(From the Detailed Annual Reports of the Registrar-General.)

Year.	Successfully vaccinated. Per cent.	Insusceptible of vaccine disease. Per cent.	Died before vaccination. Per cent.	Conscientious objection to vaccination. Per cent.	Vaccination postponed. Per cent.	Unaccounted for. Per cent.
1906	82·9	0·5	10·6	0·2	0·8	5·0
*	*	*	*	*	*	*
1914	51·7	0·9	12·1	25·1	1·8	8·4
*	*	*	*	*	*	*
1926	61·7	1·8	8·1	22·8	1·8	3·8
1927	61·9	1·5	8·2	22·7	1·8	3·8
1928	59·9	1·8	8·6	22·9	2·3	4·5

### TYPHUS FEVER.

Only eight cases of typhus fever have occurred since 1923 and these were recorded in 1926.

### ENTERIC INFECTIONS.

During 1929 there occurred 81 cases of enteric infection. The following table shows the number notified and the number verified:—

					Enteric.	Para B.	Total.
Cases notified,	...	...	...	...	87	33	120
Cases verified,	...	...	...	...	37	44	81

This incidence is in excess of that for 1928, when 57 cases were recorded, but is within the limits of the range of incidence which has been experienced in the City since 1924. The following are the individual yearly figures of definitely verified cases:—

1921, ...	...	...	108	1925, ...	...	...	44
1922, ...	...	...	85	1926, ...	...	...	100
1923, ...	...	...	126	1927, ...	...	...	148
1924, ...	...	...	82	1928, ...	...	...	57
		1929, ...	...	...	81		

No examples of para A infection were detected.

No outbreak connected with a milk supply or an institution occurred during the year, the cases being fairly well dispersed throughout the city, although in the Northern and Central Divisions a higher incidence was noted. The following table shows the number of cases in connection with which bacteriological examinations were made,

the total number of contacts, the number of contacts examined, and the number found positive.

	Enteric Fever.	Para B.	Totals.
Number of verified cases, ... ..	37	44	81
Number of cases <i>in connection with</i> <i>which</i> urine and fæces were examined, ... ..	16	13	29
Number of contacts +10, ... ..	118	122	240
Number of contacts -10, ... ..	27	17	44
Total number of contacts, ... ..	145	139	284
Number of contacts examined (urine and fæces), ... ..	50	40	90
Number found positive, ... ..	—	5	5

Of the five contacts in which positive bacteriological results were found on examination of stools, three were in one family, and the remaining two in separate families. The three members of the one family who were found to be positive were shown to be suffering from mild attacks of para B infection; the first patient in the house was the mother, who had subsequently infected three of her children. The fourth positive result was obtained in the patient's grandmother, who, however, refused to submit further specimens for examination, so that she might quite well be a carrier. The remaining instance in which a positive bacteriological report was obtained in a contact is described at more length, as it is of some epidemiological interest.

A girl, aged 19, sickened with paratyphoid B fever on 24th March, and was removed to hospital on 30th March. The fæces of the home contacts—seven in number—were submitted to the Bacteriological Laboratory for examination, and a sister of the patient, aged 21, was on 15th April reported to be carrying bacillus para-typhosus B in her stools. The elder sister on further questioning gave a history of having suffered from “chill in the stomach” on 17th March, when she was in bed for two days. She had no diarrhoea or vomiting, her chief complaint, apparently, being abdominal pain. On 15th March, two days before taking ill, she had attended a wedding feast at which she partook of salmon. The people who attended the wedding, were interrogated and none were found to have suffered any ill effects. The source of infection could, therefore, not be traced. This girl undertook the cooking for the complete household, and it was apparent that she infected her sister seven days after the date on which she sickened. Further specimens of stool were negative for para B typhosus bacillus, but a sample of blood taken on 16th May agglutinated the organism in a dilution of 1 : 2,000.

*Multiple Cases in the same House.*—There were four instances where more than one case of enteric infection occurred in the same house. In two cases two members of the same family were infected; in one case three members; and in the remaining case four members.

*Age and Sex.*—The age and sex incidence is shown below.

	-5	-10	-15	-20	-25	-35	-45	-55	-65	65+	Total.
Males, ...	5	4	1	4	7	6	2	3	3	—	35
Females, ...	4	3	2	12	8	8	2	6	1	—	46
											81

*Institutional Cases.*—No cases were infected in institutions, but 12 cases were sent into general hospitals and subsequently diagnosed enterica. Of these 12 cases it is interesting to note than nine came from outwith the city.

*Source of Infection.*—Apart from the secondary cases in the familial groups, the source of infection was undetected; this means that only in seven cases was the source found.

The practice of taking blood for Widal Reaction from contacts has been carried out, but it has been found that a number of contacts have been unwilling to give a few c.c.'s of blood.

The following table of death-rates since 1881 shows the marked decline which is taking place in this affection:—

1881-90, ...	·230 per 1,000	1921-25, ...	·012 per 1,000
1891-1900, ...	·215 „	1926, ...	·015 „
1901-10, ...	·127 „	1927, ...	·009 „
1911-15, ...	·058 „	1928, ...	·009 „
1916-20, ...	·023 „	1929, ...	·006 „

### SCARLET FEVER.

The number of cases of scarlet fever registered during the year was 3,354, which is 117 more than the number occurring in the preceding year. Of the total cases, 3,120 were removed to hospital, or 93 per cent., which is the same as in 1928, when the standards for home isolation were somewhat relaxed. Relatively few cases, however, were left at home, except in wards such as Kelvinside, Pollokshields, Langside and Cathcart, where about 30 per cent. were so treated. The slightly higher incidence of the disease is the first adverse change in the incidence which has occurred since the maximum reached in 1926, the excess taking place in the later months of the year, especially towards the end of November, when the usual annual maximum was reached. During July the minimum number of cases was recorded, 183, while the maximum in November was 459. The highest ward incidence was 177 in Govanhill, while 169 occurred in the contiguous ward of Gorbals. Both these wards have a relatively large proportion of children, and so also has Shettleston, where 171 cases occurred. The annual case rates in the City for the past five years are given in Appendix Table XVII., while the monthly prevalence is shown in Table XIX.



The death-rate from this disease since 1881 is shown in the following table:—

1881-90, ...	·490 per 1,000	1921-25, ...	·064 per 1,000
1891-1900, ...	·295 „	1926, ...	·081 „
1901-10, ...	·116 „	1927, ...	·039 „
1911-15, ...	·163 „	1928, ...	·030 „
1916-20, ...	·060 „	1929, ...	·034 „

While the fatality rate in 1929 was slightly higher than that for the preceding year, this may have been due to the increased mortality which occurred generally in the early months of the year. The rates, however, since 1927, when serum treatment was begun, compare favourably with the rates obtaining during previous years.

*Secondary Cases.*—There were 27 cases of scarlet fever sickening in households after disinfection for a previous case. The percentage occurring within one week after disinfection for a previous case was 63, the second week 30, and 7 over that period.

*Return Cases.*—The number of return cases—*i.e.*, cases sickening after return of a previous case from hospital—has remained at 2 per cent. of the dismissals during the past ten years. Of the return cases, 32 occurred within one week of the hospital dismissal, 22 within two weeks, and 17 over that period, representing 45, 31, and 24 per cent. of the total respectively.

#### RETURN AND SECONDARY SCARLET FEVER IN THE SOUTH-WESTERN DIVISION FOR YEAR 1929.

In view of the apparent increase of return cases of scarlet fever in this division, and the shortening in the length of hospital stay, now more commonly advocated in this disease, it was considered advisable to analyse the data available to see if a cause could be found and a remedy suggested.

The total number of return cases of scarlet fever for 1929 was 22—or a return case rate of 4·9 per cent.—which, arranged according to hospitals in which the primary cases were treated, was:—

#### SOUTH-WESTERN DIVISION.

	Return Cases.				Dismissed Well.	Return Case Rate.
Belvidere, ...	...	...	...	3	110	2·7%
Ruchill, ...	...	...	...	1	3	—
Knightswood, ...	...	...	...	4	20	—
Shieldhall, ...	...	...	...	14	317	4·4%
Total ...	...	...	...	22	450	4·9%

## CITY OF GLASGOW FIGURES FOR 1929.

	Return Cases.	Dismissed Well.	Return Case Rate.	Average Days Residence.	
				Males.	Females.
Belvidere, ...	36	1,418	2.5%	46	46
Ruchill, ...	13	935	1.4%	46	43
Knightswood, ...	8	255	3.1%	43	40
Shieldhall...	14	330	4.2%	42	41
Total, ...	<u>71</u>	<u>2,938</u>	<u>2.4%</u>		

The tables show the return case rates of dismissals from the four fever hospitals in the City, from which a comparison can be made between the South-Western Area and the City generally. Shieldhall Hospital receives the majority of the cases of scarlet fever from this division, in which there was apparently a slight preponderance of return cases.

*Time Distribution.*—November and December were the most prevalent months for the sickening of the second case. *As an example*—the frequency distribution according to the days residence in hospital was next considered. The total number dismissed well from Shieldhall Hospital was 317, with 15 causing secondary return cases (two in one instance returning to one household), giving a percentage return rate of 4.7.

Days Residence.	-20	-25	-30	-35	-40	-45	-50	-55	-60	60+	Total.
Dismissed well, ...	8	10	63	81	44	32	14	13	13	39	317
Dismissals causing secondary cases, ...	1	1	3	4	—	1	2	—	1	2	15
Rate (per cent.) ...	12.5	10	4.8	4.9	—	3.1	14.3	—	7.7	5.1	4.7

*Duration in Hospital.*—Although the average stay in hospital of patients causing return cases was 40 days, a considerable number were dismissed after one month's sojourn.

*Incubation Interval.*—The interval in days between the return of the primary case from hospital and the sickening of the second is shown thus:—

Days.	-4	-6	-7	-8	8+
Cases, ...	2	4	4	2	10

The average number of days after the eighth day was 16. The table shows that 12 cases sickened within one week and over that period 10, the risk of infection being fairly protracted in time.

## AGE DISTRIBUTION OF RETURN CASES.

Ages.	-5	-10	-15	-20	-30	-35	-40	Total.
Number of cases, ...	4	9	4	1	—	2	2	22

There was a grouping round the school ages—*i.e.*, the susceptible age period—although adults were also involved.

*Social Distribution.*—It is to be expected that the housing conditions would play an important part, on account of the close contact, particularly during sleep, in the smaller dwellings. The distribution of cases was :—

	Apartments.	1	2	3	4	7	14	Total.
Number of cases, ...	...	2	11	6	1	1	1	22
Home contacts—								
Adults, ...	...	4	30	16	3	4	6	63
Children, ...	...	5	28	13	1	3	1	51
Total ...	...	9	58	29	4	7	7	114

*Housing.*—The two- and three-apartment houses predominated. There was no gross overcrowding, in fact, the largest house noted had one return case, followed by a secondary case and a subsequent case of diphtheria.

*Secondary Cases of Scarlet Fever.*—The total number of confirmed cases booked in the South-Western District was 497, of which 16 were secondary scarlet fevers, giving a case incidence rate of 3·2 per cent., which may be compared with 12 second cases of scarlet fever (*i.e.*, subsequent cases in a household before removal of the primary case and disinfection of the premises, or following a primary home case) mostly occurring within two weeks; these showed a case rate of 2·6 per cent.

The cause of secondary scarlet fever cases can easily be explained by a throat carrier state of the contacts, which cannot be remedied by disinfection of premises and fomites; whereas the “second” cases of scarlet fever are probably due to delay in hospitalisation of the primary case and defective home isolation.

*Home Treatment of Scarlet Fever.*—This is not entirely satisfactory where there are susceptible inmates. Forty-three cases, or 8 per cent. of booked cases in the area, were treated at home.

*Complications.*—Two cases with an acute mastoid disease occurred, requiring subsequent removal to an infectious disease hospital for operation. Albuminurias were infrequent. In the new housing schemes there was a tendency to treat more cases at home. The provision for isolation was usually good.

*Conclusion.*—The higher incidence of return cases of scarlet fever in the South-Western Division led to a consideration of the possible factors associated, *viz.*, infective lesions in dismissed cases, duration of hospital isolation and social conditions of the contacts. It is not clear what factors are involved, and there is no obvious solution of the difficulty.

## DIPHTHERIA.

The incidence of diphtheria again shows a definite decrease, only 2,118 cases being recorded in 1929 as against 2,630 in 1928. This lower incidence of the disease is likely to continue coincident with the reduction in the birth-rate which has taken place since 1920. The highest incidence was again among children between 5 and 10 years of age, when about 40 per cent. of the cases occurred. The disease is definitely more prevalent among females, except at the very young ages under two, when there is probably a small excess of male children. At the age period 5 to 10, the females exceed the males by about 25 per cent. At 10 to 15 the excess is almost 40 per cent.; 50 per cent. at 15 to 20; and 100 per cent. from 20 to 25 years and thereafter. This excess among females at later ages is probably due to their close association with children, and especially their attendance on the sick.

The seasonal prevalence always occurs in the closing months of the year, the highest number of cases being 251 in November, while fully one-third of the total cases occurred in the last quarter. As is the case with scarlet fever, the incidence is usually heaviest in the ward where the proportion of children is greatest, Shettleston being the most heavily affected, with 102 cases, followed by Calton with 99, and 96 in Gorbals. The spread of infection from one case to another is well illustrated by the larger numbers occurring in most of the East-end wards, the prevalence being sustained there more or less throughout the year.

All but 57 of the cases were removed to hospital, or nearly 98 per cent. of the total. Experience has demonstrated that in towns immediate removal to hospital is probably the wisest procedure, as most of the serious cases occur where housing conditions are least suitable for isolation and treatment. Anti-toxin is supplied on request to medical practitioners who desire it for the immunising of cases treated at home.

The seasonal prevalence according to month is given in Appendix Table XIX.

The following table shows the death-rates per 1,000 living since 1881:—

1881-1890,	.280 per 1,000 living.	1916-20,	.143 per 1,000 living.
1891-1900,	.231	1921-25,	.122
1901-1905,	.134	1926,	.120
1906-1910,	.205	1927,	.100
1911-1915,	.187	1928,	.122
		1929,	.116 per 1,000 living.

## ERYSIPELAS.

During the year 1,098 cases of erysipelas were registered, of which 588 were removed to hospital and 30 were treated in other institutions. For the preceding year the respective numbers were 922 registered,

474 removed to hospital and 19 to other institutions. This increase, both in the total number of cases and in the number admitted to hospital, may possibly be related to the considerably higher number of cases of puerperal fever which occurred during 1929 and the higher incidence of scarlet fever, both of which are associated with streptococcal infection of hæmolytic type. The seasonal incidence of all these diseases is somewhat similar, the minimum being reached during the summer period and the maximum towards the middle of winter.

## DISEASES OF THE CENTRAL NERVOUS SYSTEM.

*Cerebro-spinal Fever.*—The annual incidence of cerebro-spinal fever in Glasgow from 1914 to 1929 is shown as follows:—

1914, ...	...	...	47	1922, ...	...	...	67
1915, ...	...	...	179	1923, ...	...	...	64
1916, ...	...	...	143	1924, ...	...	...	66
1917, ...	...	...	83	1925, ...	...	...	62
1918, ...	...	...	75	1926, ...	...	...	66
1919, ...	...	...	79	1927, ...	...	...	79
1920, ...	...	...	85	1928, ...	...	...	102
1921, ...	...	...	63	1929, ...	...	...	203

In 1928 there was an increase in the notifications, due to an increased prevalence in the first four months of the year, but it was not till the early months of 1929 that there was any indication that the disease was acquiring an epidemic tendency.

*The Epidemic of 1929.*—The first signs that the disease was assuming an epidemic prevalence was the occurrence of a series of cases, mostly acute, some being of the fulminating type. This group occurred amongst boys aged 14 to 18 years, who were in the habit of attending a recreation hall in the Eastern Division of the City. Two of the cases showed the petechial rash of "spotted fever." A fuller description of this series is given later.

Early in 1929 it became apparent that an unusual movement was taking place with regard to cerebro-spinal meningitis, and the Public Health Department issued a circular letter to medical practitioners warning them of the possibility of an outbreak, and emphasising some of the salient features of the more acute forms of the disease. There is ample ground for belief that notification was fairly complete in consequence.

All cases were personally investigated by the medical staff of the department during the months of January to June, 1929, and special enquiry was made into the relevant epidemiological features of each case. Of the total number of cases notified during the first six months, 143 were regarded as verified. Of these, 134 were confirmed bacteriologically or at post-mortem.



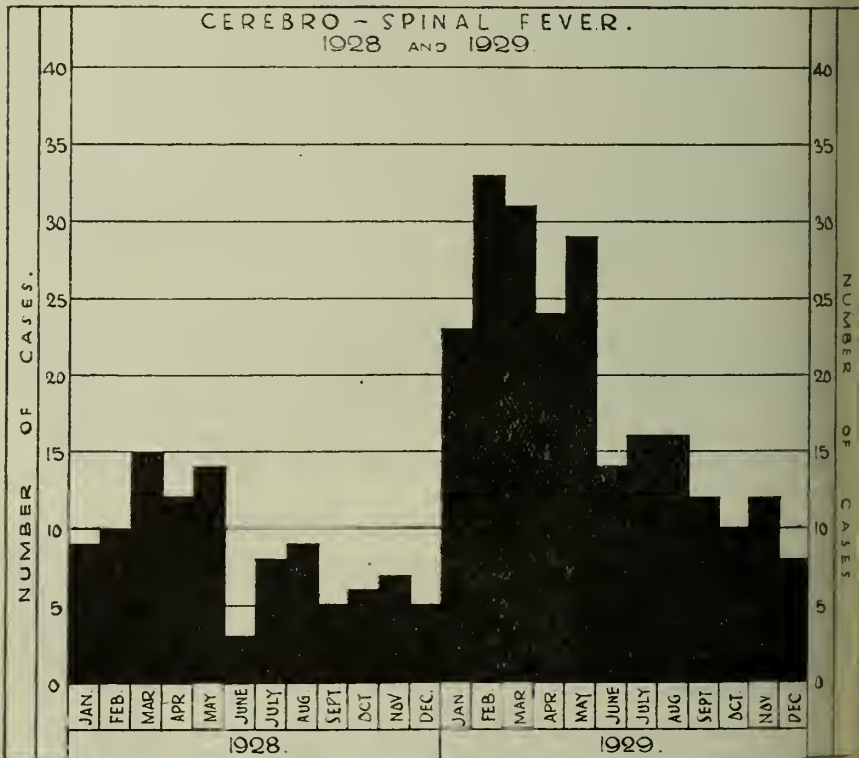
The age incidence and case mortality were as follows:—

Age.	-5	-10	-15	-20	-25	-35	-45	-55	-65
Males, ...	52	4	7	12	4	4	1	1	1
Females, ...	29	5	5	3	3	1	1	1	—
Totals, ...	81	9	12	15	7	5	2	2	1

Case mortality:—Males, ... 83·7%      Females, ... 83·3 %

It will be observed that the incidence in males was almost double that in females. It was found that this discrepancy was particularly marked in the first year of life. The disease was equally fatal in both sexes. The ages most favourable to recovery were 5-25, in which groups the case mortality was 67 per cent.

#### GLASGOW CASES OF CEREBRO-SPINAL MENINGITIS, 1928 AND 1929.



*Social Distribution.*—In one-apartment houses 36 cases, or 26·8 per cent., occurred. Of the total population of the City, according to the census of 1921, 16·5 per cent. lived in houses of one apartment.

50·7 per cent. of the cases occurred in two-roomed houses, and of the total population 45·5 per cent. occupied two-roomed houses. In houses of more than two apartments the proportion of cases to population rapidly diminishes. Cerebro-spinal fever is, therefore, essentially a disease of small, overcrowded, and consequently badly ventilated houses.

*Time Distribution of Cases.*—The attached histogram shows the time distribution of cases notified, less altered diagnoses, in four-weekly periods throughout 1928 and 1929. The greatest incidence was during the early months of 1929, but the number of cases remained higher than usual throughout the year.

*Association and Grouping of Cases.*—In the first six months of 1929 there were three definite groupings of cases, and in nearly all of these the disease was of a virulent character. The most important group centred round a recreation hall in the Eastern Division of the City. This hall was used as a sort of clubroom for youths, mostly between 14 and 18 years of age, where they forgathered of an evening to play cards, dominoes, billiards, &c. It was often rather crowded in the evening, and the atmosphere decidedly “fuggy.”

In all there were ten cases associated with this recreation hall. The first five sickened between 28th January, 1929, and 1st February, 1929. One case, J. H., aged 15, was admitted to the Royal Infirmary with a diagnosis of acute appendicitis. He died on 1st February, and at the autopsy was found to have been suffering from cerebro-spinal fever. On investigation it was found that another boy, F. G., aged 14, a chum of the former, had been admitted to Belvidere Hospital as a case of pneumonia on 2nd February, and he also was subsequently diagnosed as cerebro-spinal fever. The third case, J. M., aged 15, died at home after a very brief illness commencing on 31st January and lasting less than twenty-four hours. A post-mortem examination was carried out at the instance of the Fiscal, and the cause of death was made out to have been “an acute infection.” There is little doubt, in the light of subsequent events, that this was a case of fulminating cerebro-spinal fever.

The next case, D. P., died at home after an illness of less than one day. The next two cases, D. R., aged 15, and A. C., aged 14, were both admitted to Belvidere Hospital, the first as pneumonia and the second as cerebro-spinal fever. At present the former, who recovered, is completely blind, the blindness being due to a progressive metastatic infection of the uveal tract, probably of the choroid in the first place, by the organism which caused the cerebro-spinal fever.

After the explosion of these six cases there was a lull for a fortnight, until on 14th February another boy—an Italian, M. T., aged 15—sickened with cerebro-spinal fever and died after a brief illness on 21st February. His was the second of three deaths which occurred

in the one family. On 18th March there was an eighth case, R. B., aged 19, and on 25th April the ninth case, J. H., aged 16, sickened. A further case occurred at the end of June. This also was a very acute infection which terminated fatally, and the patient was the second of two cases in the one house, the first having sickened on 14th May, 1929, an acute fulminating case with a rash, which ended fatally after two days' illness.

In connection with this group of cases the following is worthy of note. A boy, 13 years of age, who was in the habit of frequenting the hall, became ill on 2nd February. His ailment was diagnosed as rheumatism by his doctor. In view of his association with other cases he was sent to hospital for observation. Naso-pharyngeal swabs were examined and the meningococcus found. Current opinion on the method of spread of infection of cerebro-spinal fever would not favour the belief that this boy was the source of infection of the other cases, but exactly what part he played in the spread of the disease it is impossible to say.

The following is a list of the cases associated with the recreation hall:—

Name.	Age.	Date of Sickening.	Admitted to Hospital.	Died.	Duration of Illness.	Meningococcus found.	Rash Present.
J. H.	15	30/1/29	31/1/29	1/2/29	2 days	Yes	No
F. G.	14	28/1/29	2/2/29	26/3/29	60 days	"	"
J. M.	15	29/1/29	—	30/1/29	1 day	No	Yes
D. P.	15	3/2/29	—	4/2/29	1 "	"	No
D. R.	15	31/1/29	1/2/29	—	21 days	"	Yes
A. C.	14	1/2/29	8/2/29	—	16 "	Yes	"
M. T.	15	14/2/29	16/2/29	21/2/29	6 "	"	No
R. B.	19	18/3/29	21/3/29	10/4/29	23 "	"	Yes
J. H.	16	25/4/29	28/4/29	—	9 weeks	"	No
C. M'C.	15½	30/6/29	7/7/29	12/7/29	12 days	"	"

Connected with this group of cases there were two separate family outbreaks, one in which three members of one family sickened and died after very short illnesses, and the other where two fatal cases occurred.

A most interesting association of two cases occurred in the Western District of the City. An infant, 7 days old, died after an illness of 7 hours' duration. An autopsy was carried out, and the meningococcus was recovered both from cisternal puncture and from the base of the brain. A child, aged 10, who lived on the flat above had come down to assist in nursing the baby on the morning of its birth. This girl was on that morning complaining of a headache, and on the following day she was removed to hospital with cerebro-spinal fever, which proved fatal a week later. The presumption is that the infant was infected shortly after birth, and seven days later developed the disease in a fulminating form. This is probably the youngest case recorded.

Two other associated cases occurred where the patients were brothers, but did not live in the same house. One brother was in

hospital—a general hospital—suffering from a disease which subsequently proved to be cerebro-spinal fever. Before his condition was diagnosed he was visited by his brother, who sickened at home about ten days later. It is very unusual to be able to trace case to case infection after such a slight contact. These two last examples would point to a space of time up to ten days as being the incubation period of cerebro-spinal fever.

*Distribution.*—The largest concentration of cases occurred in the Calton area. Smaller groupings were also noted in Partick and Kinning Park, but apart from these the disease seemed to attach itself to no particular locality, the great majority of the cases being widely separated. The better class residential districts were completely exempt, as would be expected.

*A Note on Cases Recovered.*—The 22 cases which recovered were all followed up in the early months of 1930, when it was found that eighteen were showing no *sequelæ*. Of the remaining four, one was blind, one was completely deaf, and two suffered from headache and nervousness and were temperamentally slightly unstable.

#### REPORT ON CASES OF CEREBRO-SPINAL FEVER IN THE SOUTH-WESTERN AREA FOR THE YEAR 1929.

An attempt was made to show the factors—social and epidemiological—causing an increased incidence of cerebro-spinal fever in the South-Western area and the results of the bacteriological examinations of post-nasal swabs from the contacts.

The total number of notifications for the year was 52, with altered diagnoses numbering 18, four of which were tuberculous meningitis and two poliomyelitis. The number of confirmed cases was 34.

#### AGE AND SEX DISTRIBUTION.

Ages.	-1	-2	-3	-5	-10	-15	-20	-30	-60	Sex.
Cases, ...	11	11	1	1	5	1	2	1	1	14 females 20 males.

There was a preponderance in infants under two years of age, and again around the early school ages, there being slightly more males than females affected. The deaths numbered 21, giving a case mortality rate of 64 per cent.

*Distribution in Space.*—There were four examples of two cases occurring in the same street at a considerable interval of time. In only one instance was there an indirect contact association between a case treated at home and another, within the incubation period of the disease. The two direct contacts, however, gave negative post-nasal swabs for meningococci.



*Distribution in Time.*—The average monthly case incidence for the first six months of the year was four, and for the latter half of the year two, only one case occurring during the month of July. There was a higher incidence and mortality during the first six months of the year.

*Social Distribution.*—

HOUSING.

	1 Apartment.	2 Apartments.	3 Apartments.	Total.
Number of cases,	8	18	8	34
Total contacts—				
Adults, ...	22	63	32	117
Children, ...	25	53	14	92
	47	116	46	209

The above table shows the tendency for the disease to affect the poorer classes and wards. The two-apartment house predominated, and there was a slight degree of overcrowding, particularly in the one-apartment houses.

*Administration.*—Thirty cases were treated in hospital, and only one case was treated at home to a successful issue. Three children died at home before removal to hospital. The usual period between the onset of the disease and the removal to hospital was four or five days, death in many instances following within a day or two. Most of those affected were non-scholars. Of the adults, three were labourers and one female a shop assistant.

Several of the notifications were received from general hospitals on account of the cases having been transferred from their homes to these institutions before a diagnosis was made.

*Bacteriological Examinations of Contacts.*—Naso-pharyngeal swabbing was carried out in contacts of cases admitted to hospital within a few days of removal, viz.:—in 10 adults and 33 children, mainly for the purpose of allowing them to resume school at the end of the fixed period of exclusion, a fortnight. In no instance was a positive result for meningococci obtained, although the swabbing was done under ideal conditions for cultural growth, by direct inoculation of media and immediate incubation of plates. These results do not confirm the accepted view of the high carrier rate of immediate contacts of cases of cerebro-spinal fever.

TABLE SHOWING THE NUMBER OF CONTACTS SWABBED AT DAILY INTERVALS.

(a) Between sickening date and swabbing.

(b) Between removal to hospital and swabbing.

	Days.																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	15	19	24	26	49	Total	
(a) Number of contacts,	-	-	-	-	2	2	1	7	1	2	4	2	4	1	6	3	2	6	43	
(b) Number of contacts,	1	-	-	6	19	8	-	1	-	2	-	1	2	-	3	-	-	-	43	



## SUMMARY.

A crudescence of sporadic cerebro-spinal fever over an extensive area, with low infectivity, was noted in the South-Western Division, with a relatively high death-rate among young children. A definite association was traced between two cases. The carrier state even among the immediate contacts was short-lived.

*Encephalitis.*—During the year 33 cases were registered as acute encephalitis and one of acute polioencephalitis, compared with 34 and two respectively during the preceding year. Of the total cases nine were notified in March. Only one case was under five years of age, and five were of school age. The sex distribution shows that females were more heavily affected than males: only nine of the cases were males.

A survey of the cases of encephalitis lethargica in the City was made towards the end of the year. Only three of the cases notified during the year have been verified, so that the City may almost be regarded as free from the disease. Sixteen chronic cases, however, came to the notice of the Department for the first time, the diagnosis in these cases being based upon the sequelæ from the original acute attack, which occurred most in 1926 during the last epidemic. Of the known chronic cases, 29 died during the year, and seven of these deaths were due to intercurrent disease.

There were altogether 97 admissions in hospital and 336 at home, while 35 who had been previously under observation could not be traced, practically all having gone to unknown addresses. A few of the latter are known to have emigrated, which would indicate considerable recovery in some of these cases. There are still 14 cases in mental institutions. In the special ward for this disease at Stöbhill Hospital there are 33 cases, and very little progress, if any, can be reported in any of these; in fact, deterioration has been more or less the general rule among them. In other parish hospitals there are 29 cases, and in other institutions 10. Of the home cases, 34 are children who are able to attend school; 135 are adults fit for work of various descriptions, and 24 are bedridden.

The waiting list for admission to the special ward in Stöbhill has always been a long one, this being due to the fact that the turnover of cases is necessarily small, owing to the prolonged period of treatment required by the cases after they are admitted. Many of these cases will be retained indefinitely owing to the fact that it is quite impossible to treat them at home.

*Acute Poliomyelitis.*—This disease was considerably less prevalent than in 1928, when the first recorded outbreak occurred in the City and was made the subject of a special enquiry, which was described in the report for last year. The number of cases registered in 1929 was 26, 11 of whom were treated in Local Authority hospitals and

five in other institutions. The case rate for the disease in 1929 was equal to 22 per million of the population, as against 104 in 1928 and 11 in 1927. Of the total, six occurred in September, but there was no associated outbreak, there being only one ward with three cases during the year and five other wards with two cases. Only four cases occurred among persons over school age.

### MEASLES.

The last epidemic occurred during 1927-28, so that the epidemic which began in the autumn of 1929 will not be completed until towards the end of spring 1930. When the year began a few cases of measles were occurring—between 20 and 30 per week. For a period during spring larger weekly numbers of cases were recorded, indicating that the disease was present in subdued epidemic form, first in Whiteinch, then in Parkhead, and later in Sandymford and Cathcart, but the sequence was broken by the school holidays, when the weekly numbers dropped from an average of between 100-140 to about 20, most of which were occurring in the Eastern district. During the latter part of the year the disease became increasingly prevalent in that district, and was also epidemic in the South-Eastern area of the City, so that altogether by the end of the year 6,468 cases had been recorded, compared with 10,098 for the preceding year. Owing to the mildness of the disease, and to the comparative absence of pneumonia as a complication, only 608 cases were removed to hospital. The mildness is definitely indicated by the low mortality, 69 per million of the population, compared with 328 for the preceding year and 272 in 1927.

*Notes on Measles Epidemic, 1929-30.*—With the completion of the first quarter of the year 1930 it is now possible to compare the epidemic of measles which has been prevalent in the City during the past winter with that of two years ago. Cases of the disease began in increasing numbers in the East End of the City in September, shortly after the re-opening of the schools following the summer holidays. The usual sporadic cases were occurring throughout the other wards in the City, but the epidemic type was confined to the Eastern wards during the first month or two.

The epidemic developed comparatively slowly until the close of 1929, when the South-Eastern part of the City had become well involved, and, to a certain extent, the South-Western district.

The weather conditions throughout this period, and, indeed, until the end of January, were unusually mild, and by that time the weekly numbers had reached the 600-700 level. With the severer weather conditions obtaining from the beginning of February until the end of March the epidemic assumed considerable proportions, when the disease became prevalent in all other districts of the City, the Eastern wards of the City continuing more or less affected. By the beginning of April areas in West Govan, Partick, and in the North-West were severely affected. The incidence should now diminish rapidly.

During the last quarter of 1929 the cases registered numbered 3,771, compared with 7,348 for the same period of 1927, but in the first quarter of the present year 10,227 cases occurred, as against 8,454 in 1928. The total number in the present epidemic is nearly 2,000 less than that for the six winter months of the last epidemic.

The mortality during the present winter has been less than half, 245 deaths against 572, although the death-rate during the second quarterly period has increased to a relatively greater degree. The following abstracts give a summary of the comparison of the two epidemics.

Cases.				1927-28.	1929-30.
4th Quarter,	...	...	...	7,348	3,771
1st ,,	...	...	...	8,454	10,227
				<u>15,802</u>	<u>13,998</u>
Deaths.					
4th Quarter,	...	...	...	246	55
1st ,,	...	...	...	326	190
				<u>572</u>	<u>245</u>
Death-rates per 1,000 cases.					
4th Quarter,	...	...	...	33.5	14.6
1st ,,	...	...	...	38.6	18.6
				<u>36.2</u>	<u>17.5</u>

During the mild weather conditions which obtained in the latter months of 1929 there was practically no fog, and pneumonia was not an important factor, but this complication as well as pneumonia in the acute primary form has caused considerable pressure on hospital accommodation during the past three months.

The two main features of the present epidemic, compared with the previous one in 1927-28, are (1) the slow spread of the disease in the early part of its prevalence, and (2) the low mortality. The latter is closely associated with respiratory complications, which are in turn definitely connected with climatic conditions. It is therefore interesting to compare the average mean temperature of the quarterly periods dealt with above.

The average temperature for the last quarter of 1929 was 42.9 degrees, compared with 41.5 for the same period in 1927, when the cases of measles were almost double, while the temperature of the first quarter of 1930 was 37.1 degrees as against 39.6 degrees in 1928. The cases in the present epidemic increased from 3,771 during October-December, to 10,227 for January-March, and the temperature fell from 42.9 to 37.1, whereas in the last epidemic the cases increased in the second quarter of the epidemic by little more than 1,000, while the temperature decreased by less than two degrees.

Of course, in the 1929-30 epidemic there were obviously more susceptible children left in the population at the beginning of the

second half, but it was not until the more unfavourable climatic conditions prevailed and the resistance of the susceptible was lowered that the disease became increasingly prevalent.

The mortalities are also instructive when considered in relation to the temperature. The deaths in the second part of the present epidemic are nearly three times greater with a considerably lower temperature, whereas in the last epidemic the deaths were only increased by one-third.

*German Measles.*—During the year there was a considerable prevalence of German measles, 1,458 cases being recorded, in comparison with 263 in the preceding year. This high incidence occurred in the early months of the year following the scarlet fever of the preceding winter. Its prevalence was most marked during March, April, and May, when over 1,000 cases, or more than two-thirds of the total, were recorded.

The disease was prevalent more or less throughout the City, the heaviest incidence occurring in the south-east. More than one half of the cases occurred between the ages of five and ten years.

#### WHOOPING COUGH.

The incidence of whooping-cough is somewhat more irregular in its movements than is that of measles. Following a year of heavy prevalence in 1925 there was little evidence of it during 1926. In 1927 it again became epidemic, and continued at a fairly high level during 1928, gradually subsiding during 1929, when nearly 70 per cent. of the cases occurred in the first half of the year. The highest incidence occurred in April, when 915 cases were recorded out of a total of 5,104. Little more than 10 per cent. of the cases were removed to hospital, which is somewhat similar to the proportion of cases of measles so dealt with.

The incidence was general throughout the City, although the wards in the South-Eastern Division had the highest prevalence, followed by districts in the north, such as Cowcaddens, Woodside, and North-Kelvin, and Provan in the north-east. The highest incidence occurs in the early school ages, fully 40 per cent. of the cases occurring between five and ten years, although the pre-school ages are also heavily affected. Very few cases occur after ten years of age. The mortality has not been reduced to the same extent as the cases, the death-rate per million being 218, compared with 332 in 1928, and 322 in 1927.

#### CHICKENPOX.

The compulsory notification of chickenpox under regulations issued by the Department of Health for Scotland will continue till 31st December, 1930. This precautionary measure has been adopted because of the continued prevalence of smallpox throughout England.



During 1929 there were 8,102 cases of chickenpox registered, compared with 5,563 in 1928. The disease would appear to be more prevalent every second year, although the variations in the annual numbers are less marked than is the case with measles and whooping-cough. The highest monthly incidence in 1929 occurred in May, when 1,302 cases were recorded. It may be that more cases were brought to notice at that time because of the occurrence of smallpox on the arrival of a ship from India, which is referred to in the Port Local Section of the report.

Chickenpox is always more or less prevalent, and no difficulty is experienced in dealing with the relatively small proportion of cases removed to hospital, as, for instance, 247 during 1929. The occurrence of a considerable number of cases of mild smallpox in England and Wales makes it necessary at the present time to exercise strict administrative measures in dealing with chickenpox because of the possibility of the more serious disease being mistaken for the latter.

The disease was more or less prevalent in all districts of the City, the South-Western district being most affected, and the East to a lesser degree, while a considerable number of cases were recorded in Provan Ward in the Northern district. Over 50 per cent. of the cases occurred during the school age period, five to ten years of age, while most of the remainder occurred at younger ages.

The incidence case rates and seasonal prevalence are given in Appendix Tables XVII., XVIII. and XIX.

#### OTHER INFECTIOUS DISEASES.

A record of other infectious disease dealt with, together with the number of each treated in hospital, is given in Appendix Table XVII. Among these is included ophthalmia neonatorum, and the various forms of pneumonia which are dealt with in other sections of the report; there remain trachoma and certain other diseases which are here briefly referred to.

#### ANTHRAX.

A case of suspected anthrax was reported from one of the infirmaries. The patient, a man of 33 years, who was employed as a carter in a small burgh in Ayrshire, died in the institution on 18th April. On post-mortem examination the cause of death was certified as "staphylococcal abscess in neck—staphylococcal septicæmia."

Samples of goatskin bindings, which are used for binding boxes, such as orange cases, were examined from time to time during the year for anthrax bacillus with negative result. No further instances of shaving brushes infected with anthrax were discovered.

*Anthrax in Animals.*—The Veterinary Surgeon reported on 6th June that a bullock, suspected of anthrax, was discovered at Bellgrove Cattle Station in course of transport to a butcher in Helens-



burgh. The animal, with seven other cattle, had been loaded on the previous day in a wagon and sent to Sighthill Goods Station. The wagon was returned on the following day with the dead bullock. On enquiry it was found that the infected animal had been sent here from the north of Scotland. The carcase was destroyed and all precautions taken. No further infection occurred.

### DIARRHŒA AND ENTERITIS.

These diseases, as a cause of death, occur mostly in young children, especially those in the first year of life. To that extent their incidence is associated with the birth-rate, but the great reduction which has taken place since the beginning of the present century is correlated with the administrative measures which have been taken from time to time to effect reduction. Insanitary conditions, impure milk, and infant feeding have all been dealt with, but there still occurs a number of deaths, between 300 and 500 annually, the number varying from year to year. The variations are, to some extent, related to the meteorological conditions, such as temperature and rainfall.

The number of deaths during 1929, however, shows a continuation of the reduction noticed during the past four years, as shown in the following table:—

AGE IN YEARS.				
	-1	-5	5+	Total.
1926 (Old City), ...	296	77	77	450
1927, ...	277	83	70	430
1928, ...	288	66	41	395
1929, ...	243	57	56	356

Practically all the reduction in the number of deaths occurs among infants in the first year of life, and the monthly incidence of the mortality of 243 deaths is given in the following table, with the mean temperature for each month. The comparison with the previous year is interesting, as in the first part of the year 103 deaths occurred, compared with 102 in 1928, whereas the mean average temperature was 42.9 compared with 44.4. An increase occurred in the early months of the year, when very low temperatures were recorded, and this to some extent confirms the opinion of the Superintendents of the Fever Hospitals that diarrhœa and enteritis are frequent complications of respiratory conditions among young children admitted during the spring. On the other hand, there is always an increase in the number of diarrhœa deaths, however slight, during the third quarter of the year, which is often quite marked when temperatures are unduly high. In 1929, 140 deaths occurred in the second half of the year, against 186 for the same period in the preceding year and 103 for the first six months of 1929.

The deaths from diarrhœa and enteritis in children under one year of age are given, for males and females in Tables XIII. and XIV., which show that most of the infantile deaths from this cause occur

from the first to the end of the sixth month, a period when considerable difficulty is usually experienced in the feeding of infants.

#### 1929.—DIARRHŒA AND ENTERITIS.

Month of Death.	Number of Deaths —1 Year.	Mean Temp.	Month of Death.	Number of Deaths —1 Year.	Mean Temp.
Jan., ...	27	33·7	July, ...	14	58·9
Feb., ...	18	32·9	Aug., ...	21	55·2
March, ...	13	43·3	Sept., ...	39	55·7
April, ...	10	42·4	Oct., ...	33	46·6
May, ...	21	50·4	Nov., ...	19	41·5
June, ...	14	54·6	Dec., ...	14	39·9
			<hr/>		
			243		
			<hr/>		

*Fly Nuisance.*—Following the custom of previous years, the weekly removal of material from all dung pits throughout the City was commenced in the month of May, and continued till September. In all 18,745 sprayings of pits were carried out, the total cost incurred amounting to £474, or an average of 6·18 pence per spray.

#### RABIES.

No case of rabies is known to have occurred, but a number of persons bitten by dogs were reported by the police for inquiry. These are shown in relation to the season of occurrence and the severity of the bite:—

					Slight.	Serious.
1st Quarter, ...	...	...	...	...	46	—
2nd „ ...	...	...	...	...	80	2
3rd „ ...	...	...	...	...	81	1
4th „ ...	...	...	...	...	60	3
					<hr/>	<hr/>
					267	6
					<hr/>	
					273	
					<hr/>	

1928, ... 331    1927, ... 355

In addition to the above, two persons bitten by horses were reported for inquiry.

#### TRACHOMA.

The number of cases of definite trachoma on the register at the end of 1929 was 147, a further 35 cases being considered as “doubtful.” The number of new notifications received during the year was 45, and of these 28 were definite cases, 14 were “doubtful,” and three were not trachoma.

Every endeavour was made to obtain the attendance of home contacts of new cases at the dispensary. Of the 31 home contacts examined, three were shown to be suffering from definite trachoma,

three were "doubtful," and seven suffered from varying degrees of conjunctivitis.

The multiple cases of household infection observed during the year are as follows:—

(a) *Family T.*—Three cases were found in this household, and in all instances the onset was insidious. The first to be affected was a girl of eight years of age, whose eyes had been troublesome for about a year. The second, a girl of nine, gave a history of having suffered discomfort for only two months prior to notification, and the third, a girl of eleven, who presented no suspicious symptoms, was discovered to be suffering from trachoma during the course of routine examination as a home contact.

(b) *Family M'M.*—A woman of 27, notified in 1924 and said to have been infected in 1921, had a sister aged fourteen years who during 1929 first began to complain of eye trouble, which was diagnosed as trachoma, of probably several years' duration.

(c) *Family R.*—A boy aged eight years, notified in 1928, whose illness apparently dated back for five years, did not infect his mother (aged 29) until 1929.

*Trachoma Dispensary.*—During the year 125 individuals attended the trachoma clinic; the total number of attendances for the year was 3,593. Of these 1,578 were consultations with the ophthalmic surgeon and 2,015 were for treatment by the nurse. Three patients attending the trachoma dispensary were sent to the actino-therapy clinic at Baird Street. The number of home visits paid by the trachoma nurse was 840. The increase in home visits and diminution in dispensary attendances for treatment compared to 1928 is attributable to the fact that the number of treatment sessions per week has been reduced.

*Hospital.*—Twenty-nine cases of trachoma were admitted to Ruchill and Knightswood Hospitals during the year. Of these 22 were first cases and seven were readmissions. The operations carried out were as follows:—cautery, 6; expressions, 12; epilations, 2; peritomy, 1; operation for entropia, 1.

*Clinical.*—The disease continues to be insidious in onset, the majority of cases discovered being chronic and not acute trachoma.

*Outbreak in Institution.*—In an institution containing 180 children 14 chronic cases were discovered. It was not possible to obtain accurate records of the incidence of trachoma in the institution, but there seems no doubt that infection had been present for several years. During 1928 the number of cases apparently increased, but the Public Health Department was not notified of their occurrence until July, 1929. The ophthalmic surgeon in charge supplied the following notes on

the type of the disease:—"The cases start insidiously. Children do not complain, and the disease is usually only discovered by inspection. With one exception, all the cases have been chronic in nature. Most of them show in addition a mixed infection of staphylococci and streptococci. Only two cases of pannus have occurred, and these were slight. Many of the cases are in the atrophic scarring stage. The lesions are mainly of the papillary form, some showing papillæ of such size as to resemble vegetation, a finding which points to the chronicity of the disease." The institution was inspected, and for the prevention of further spread the following measures have been adopted:—(1) Every case of trachoma to be notified immediately by the visiting ophthalmic surgeon; (2) Every new admission to the home to be examined by the ophthalmic surgeon; (3) The eyes of every child in the institution to be inspected quarterly; (4) Every case diagnosed to be suffering from or as having suffered from trachoma to be accommodated apart from the general dormitories and to wash apart from the common lavatories.

### MALARIA AND DYSENTERY.

During 1929 32 cases of malaria were registered, compared with 24 in 1928. There is no special grouping of the disease, and only in two wards were more than one case registered, two in Ruchill and two in Govanhill.

*Dysentery.*—Dysentery was considerably more prevalent, 119 cases being registered, against 45 in the preceding year. This is equivalent to a rate of 103 per million of the population. This is the highest rate recorded in the City.

The disease was made notifiable in 1919, when 117 cases were recorded, which is equivalent to a rate of 105 per million. This increased prevalence was due to an outbreak of the disease in the South-Western District of the City, when Kingston and Kinning Park Wards were involved. The outbreak is described in the following notes.

*Outbreak of Dysentery in the South-Western Division.*—An outbreak of dysentery occurred in the South-Western Division of the City in August, 1929, commencing on the 9th with a boy of six years sickening. The total notifications, 51 in number, following this were as follows:—August, 23; September, 10 and 2 altered diagnoses; October, 12; November, 4. Of the total 46 were treated in hospital and five at home.

*Bacteriology.*—These were confirmed bacteriologically as belonging to the Flexner Bacillary type.

*Area.*—The infection was confined to the South-Western District, and mostly localised in the Kinning Park Ward, 21 residents in a hollow square of tenements being chiefly involved.



*Food Supply.*—No source could definitely be ascribed as a causal factor—water, milk, ice cream (one sample gave heavy coliform infection), vegetables, shellfish, &c., being carefully watched.

*Sanitation.*—Extensive alterations in the general sanitary arrangements were carried out, with satisfactory results.

*Age Distribution.*—Children mostly under school age were affected. Their playing methods were suspected as a carrier source. Two adult males, however, were also involved.

*Clinical Symptoms.*—The cardinal signs of the affection were manifested as diarrhœa with frequency of motions (from which the organism could be recovered), blood and mucus being present, a short course, a slight febrile disturbance, with mild toxæmia. No deaths resulted. The majority were only slightly ill. The total number of clinical dysenteries was 27.

*Carriers.*—The acute carrier state was of short duration. Thirty-five gave positive stools. Of these nine were found to be contact carriers manifesting no symptoms.

*Diarrhœas Associated.*—The presence of a mild enteritis—common in the autumn—complicated the investigations and demanded 207 exclusive bacteriological examinations. In all 144 diarrhœas were visited. The Child Welfare Clinics co-operated in the search for mucous diarrhœas from 24th August. The number found was relatively small, indicating that there was no wholesale infection of the South-Western area. (In this connection it is noteworthy that weekly house-to-house visitations had been carried out in 500 households, involving about 2,000 individuals, in the South-Eastern Division of the City from September, 1928, till September, 1929, for the purpose of an inquiry into respiratory diseases. This yielded no cases of infectious diarrhœas or dysentery.)

*Preventive Measures.*—Increased vigilance and expansion of the general hygienic measures, particularly in the home, were alone advocated as a prophylaxis.

*Summary.*—A low state of general sanitation in overcrowded tenement properties, associated with a need for a higher grade of personal and domestic hygiene, particularly in dealing with a highly infectious—although fortunately in this instance not a fatal—disease, is the characteristic feature of this outbreak.

*Conclusion.*—The result of the investigations leads one to think that this disease may be endemic in Glasgow. Further publication will be made later of the detailed investigations made during this outbreak.



## INFECTIVE JAUNDICE.

The Scottish Board of Health considered it desirable that the notification of the disease should be continued, and issued the Public Health (Infective Jaundice) Amendment Regulations (Scotland), 1927, making it notifiable for a further period of five years from 31st December, 1928, *i.e.* till 31st December, 1932.

No case has occurred in Glasgow since 1926, when one was registered.

## LOCAL MOSQUITOES.

*Bogton Marsh.*—In the last Annual Report the condition of Bogton Marsh and the adjoining ditches was described in relation to the probability of their furthering the breeding of mosquitoes in that area. It will be remembered that the weather at the beginning of 1929, particularly during January and February, was of a very severe nature, and it was considered to be prejudicial to pond life generally. Only a very few larvæ of the mosquito *anopheles bifurcatus* were found in the ditches, which had been allowed to stagnate through the accumulation of silt. Late in the spring of this year these ditches were cleaned out by the proprietor. Throughout the year the marsh has remained free from flood water, and subsequent searches for evidence of mosquito breeding throughout the year failed to reveal any evidence of activity of the insect. There can be no doubt that the drainage of this area furnishes an outstanding example of the efficacy of this method of exterminating the pest. This is particularly important in view of the rapid development of building operations to the south of the City.

*Possil Marsh.*—The effects on the multiplication of the insect by the severe weather conditions at the beginning of the year were also in evidence in Possil Marsh, which, in a favourable season, is usually a fairly prolific breeding area. Searches for the purpose of obtaining larvæ of the mosquito for teaching purposes provided poor results, and only the larvæ of *fine cuillisella morsitans* were obtained. Their presence, however, is sufficient evidence that mosquito breeding, although seriously impaired by severe wintry conditions, continues where stagnant water is present.

Although the insect may be regarded as being in abeyance in the southern part of the City at present, the experience of former years has taught us how rapidly the insect may become a pest if local conditions favourable to their breeding are neglected during the warm moist season. In the Annual Report of the Medical Officer of Health for 1927, page 105, another breeding-place near Hanging-shaw, in the Mount Florida district, was discovered and treated by spraying with a carbolic disinfectant. This breeding-place has also remained practically sterile throughout 1929.

This branch of sanitation is one that is receiving the attention of the Public Health Department at all times.

## DIABETES—SUPPLY OF INSULIN.

Supplies of insulin are given to persons whose circumstances warrant such assistance and who are not already provided for under the National Insurance Scheme or the Poor Law.

There were 55 new applicants during the year; 36 of these were married women or widows, 6, while of insurable age, were outwith the National Insurance Scheme, 5 were under 16 years of age, and 8 were patients in Corporation hospitals.

Cases on Roll at 31st December, 1928, ... ..	64
„ applying for first time during 1929, ... ..	55
„ who discontinued treatment prior to 31st December, 1928, but re-applied during 1929, ... ..	5
	<hr/> 60
	124
Cases who died during 1929, ... ..	14
„ „ discontinued supply during 1929, ... ..	24
	<hr/> 38
	<hr/> 86
	<hr/>
Leaving Cases on Roll at 31st December, 1929,	86

The 24 cases who discontinued the treatment were visited and inquiries made as to the reason. These may be summarised as follows:—

Removed beyond City Boundary, ... ..	3
Discontinued on Medical Advice, ... ..	6
Discontinued of own accord, ... ..	4
To get supplies from National Health Insurance, ...	2
Hospital Cases now dismissed, ... ..	7
Others, ... ..	2
	<hr/> 24
	<hr/>

The daily dosage of the cases on the roll at 31st December, 1928, is as follows —

No. of Cases.	Daily Amount.
1 ... ..	Under 5 Units.
11 ... ..	5 to 14 „
22 ... ..	15 „ 24 „
14 ... ..	25 „ 34 „
13 ... ..	35 „ 44 „
9 ... ..	45 „ 54 „
7 ... ..	55 Units and over.
4 ... ..	Receiving double strength insulin.
5 ... ..	Not stated.
<hr/> 86	
<hr/>	

During the year 7658 phials of ordinary strength insulin (100 units per 5 c.cs.) and 228 phials of double strength (200 units per 5 c.cs.) were issued, the total cost being £658. The corresponding figures for 1928 were 5,255 phials at a cost of £547.

## SECTION V.

## RESPIRATORY DISEASES AND TUBERCULOSIS.

Respiratory diseases are receiving greater and greater attention because of the serious results they produce and the magnitude of the incidence. Recurring epidemics of influenzal pneumonia present a problem difficult of solution; the mortality with which they are attended takes a serious toll of life, especially among the young and the old. The effect of respiratory diseases on infant life has been referred to in Section III. During recent years the demand on Fever Hospital accommodation for the treatment of pneumonia, &c., creates recurring administrative difficulties.

In the early months of 1929 a severe outbreak of influenzal pneumonia took place, the results of which were aggravated by the wintry weather conditions which prevailed throughout most of the first quarter of the year.

The extent of the outbreak is shown by the deaths and death-rates during the year, given in the following summary, compared with preceding years since 1922, when a similar prevalence occurred.

Year.	Pneumonia.		Influenza.		Other Respiratory Diseases.	
	Deaths.	Rate per million.	Deaths.	Rate per million.	Deaths.	Rate per million.
1922, ...	2,303	2,129	767	709	1,477	1,365
1923, ...	1,400	1,285	65	60	972	892
1924, ...	2,198	2,006	412	376	1,283	1,171
1925, ...	1,665	1,517	210	191	1,098	1,000
1926, ...	1,758	1,596	386	350	967	878
1927, ...	1,792	1,585	204	180	881	779
1928, ...	1,801	1,570	210	183	813	709
1929, ...	2,447	2,109	878	756	1,212	1,045

The total number of deaths from pneumonia, 2,447, is greater than the number registered in any previous year and exceeds by 144 those occurring during 1922. The death-rate reached the high figure of 2,109 per million of the population. Deaths from influenza were more numerous, 878 against 767 in 1922, but the deaths from other respiratory disease, such as bronchitis, &c., are fewer than those which occurred in 1922.

The closing months of 1928 were exceptionally mild, with practically no fog. The vital statistics of the City had remained very favourable for that period of the year, but it was known from references in the Press and official publications received from America, that a widespread prevalence of influenza which began in the first part of November in the Western states, had gradually spread eastwards, and the

Eastern States had become heavily affected by the middle of December. It was also learned that influenza had been very rife among both crews and passengers of vessels arriving here in the closing days of December, and Glasgow was one of the first cities in this country to be attacked. The rapid increase in incidence is strikingly illustrated in the following summary of the weekly analysis of the deaths. Other places throughout the country became affected later, but the incidence in Glasgow was probably heavier than in most. The maximum mortality was reached on 26th January, when the general death-rate rose to 53·4, a rate which has only once been exceeded, *i.e.*, the third week in January, 1922, since the last exceptional spell of severe weather in 1895, when the death-rate for the last week of February was 53·6.

GLASGOW INFLUENZAL PNEUMONIA EPIDEMIC, 1929.—WEEKLY  
NUMBER OF DEATHS AT CERTAIN AGES FROM  
RESPIRATORY DISEASES.

Week-ending,				-1 year.	-5 years.	+5 years.	Total.	Deaths Registered. All causes.	Death Rate. All Causes.
5th Jan., 1929,	...	...	...	16	9	91	116	426	19·5
12th „ „	...	...	...	23	40	190	253	682	31·2
19th „ „	...	...	...	47	75	342	464	944	43·2
26th „ „	Influenza,	...	...	20	13	200	233		
„ „ „	Pneumonia,	...	...	79	119	99	297		
„ „ „	Bronchitis,	...	...	8	2	97	107		
„ „ „	Other Respiratory Diseases,	...	...	—	1	16	17		
Total,	...	...	...	107	135	412	654	1,167	53·4
2nd February, 1929,	...	...	...	104	138	305	547	993	44·5
9th „ „	...	...	...	41	46	152	239	582	26·1
16th „ „	...	...	...	21	24	84	129	443	19·9

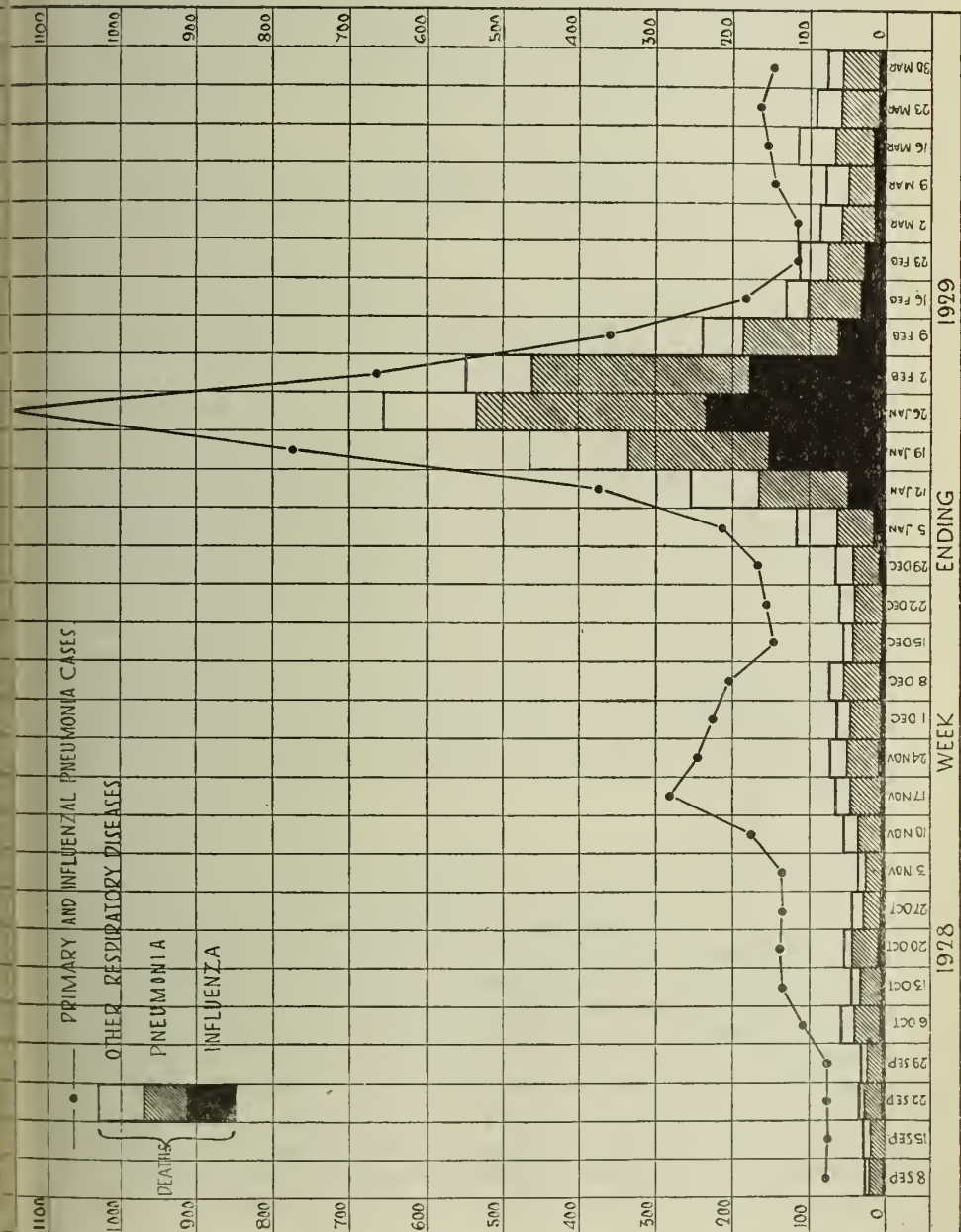
The rapid rise and fall in the cases of primary and influenzal pneumonia, together with the deaths from the various forms of respiratory diseases is illustrated in the diagram which follows.

During the three weeks at the height of the epidemic more than 50 per cent. of the total weekly deaths were caused by respiratory diseases. The maximum number of respiratory deaths occurred during the fourth week, when there were 654, of which 107 were under one year and 135 between one and five years. Most of these were certified as due to pneumonia. Of the 233 deaths from influenza during that week, only 20 occurred among children under one year, and only 13 between one and five years. This disparity between the ages at death from influenza and pneumonia characterised the other weeks.

All the available hospital accommodation was utilised for the treatment of serious cases and at one time over 600 beds were devoted to this purpose, while the Glasgow Parish Council arranged for the admission of a considerable number of the cases to their

## GLASGOW PNEUMONIA EPIDEMIC, 1929.

WEEKLY NUMBER OF PRIMARY AND INFLUENZAL PNEUMONIA CASES—DEATHS FROM INFLUENZA, PNEUMONIA AND OTHER RESPIRATORY DISEASES.





various hospitals. In addition, a number of the Tuberculosis Nurses and Health Visitors were seconded from their usual duties and transferred to home visitation and nursing of cases of pneumonia which could not be admitted to hospital. In a number of cases provision was made for supplying extra nourishment for the patients. At the height of the outbreak the Glasgow District Nursing Association lent most valuable aid and in fact took over a very large share of the home visitation and emergency nursing.

The epidemic was widespread throughout the city within a fortnight from the first indication of the presence of the influenzal type of the disease and the staffs of many businesses and works were seriously depleted, while instances were common in which whole households were affected.

Apart from wards such as Anderston, Gorbals, Kingston, Govan, etc., which are contiguous to docks, the other districts which were seriously affected, were Dalmarnock and Calton in the East-end of the city and Woodside in the North.

Reference is made to the clinical features of the outbreak in the hospital reports of the Medical Superintendents. The type mostly prevailing was a severe broncho pneumonia, most severe among children and the aged. The principal administrative difficulty centred round the numerous cases where more than one member of a family was attacked at the same time. The home visitation arranged for at the outset was extremely valuable in enabling selection to be made of urgent cases and permitting the available beds to be used to best advantage.

This experience led to a reconsideration of the method of admission of pneumonia patients as a routine during winter and it was arranged that all notified cases, where removal was requested, should be visited by a health visitor and the home circumstances reported before admission. The following circular was addressed to medical practitioners :—

“ 13th November, 1929.

“ Dear Sir (or Madam),

#### “ HOSPITAL ACCOMMODATION

“ It has occurred to me that the issue of a note to medical practitioners, explaining the hospital position generally and some of the difficulties encountered in the admission of infectious diseases, would be mutually helpful and advantageous. *The pressure on the available bed accommodation, particularly for pneumonia and measles, is now considerable, and it may be forecasted that it will become acute during succeeding months, and will probably remain so until next March.*

“ The reasons for this pressure may be explained. Scarlet fever is more prevalent than was expected. This affection rises and falls in incidence over a period of roughly ten years. The height of the present cycle was reached two years ago, but the expected reduction

in the winter incidence is proceeding very slowly, with the result that the demand for accommodation has been greater than was anticipated, and an abatement of prevalence cannot be hoped for during the next two or three months. Practitioners should keep in mind the possibilities of the home treatment of this affection which, will be approved where the facilities for isolation of the patient are at all reasonable. Diphtheria is continuing on a wave of relatively high prevalence, and is making a considerable demand on hospital accommodation.

"The beds in the various Glasgow fever hospitals now devoted to the treatment of these two affections amount to 591 for scarlet fever and 363 for diphtheria, or almost 1,000 beds.

"The enterica group of diseases and affections of the central nervous system create only a moderate demand on accommodation, although since the last serious outbreak of influenza cerebrospinal meningitis has been somewhat more frequent than at any time during the preceding ten years. On the other hand, accommodation for puerperal fever has had to be increased.

"There has developed in recent years a marked increase in the demand for the treatment of acute pneumonia in the city hospitals, until approximately 60 per cent of the notified cases of this disease are admitted, apart altogether from patients sent to the general hospitals. It may be pointed out that there is in practice a great deal of latitude in the diagnosis of acute primary pneumonia as regards both notification and admission of patients to hospital. Indeed, it often happens that comparatively trifling cases of bronchitis are reported and admitted as acute pneumonia. Under ordinary circumstances there might be little objection to this practice, but sometimes in as many as twenty per cent. of the cases there has been no apparent evidence why the diagnosis of acute pneumonia had been made, nor did the cases develop pneumonia. In times of pressure such patients occupy beds to the exclusion of more urgent cases.

"Another, and more serious, difficulty arises when pneumonia and measles are together prevalent in the city. *Quite apart from the large demand made upon the hospital beds, there is a serious risk of the occurrence of cross-infection of the pneumonia wards with measles. This is a constant menace, and a grave incident when it occurs.* On three occasions this winter wards have been so cross-infected and put out of use by patients notified and admitted as pneumonia, in whom there was no definite evidence of any serious disease, but who developed Koplik spots some days after admission. In other cases, a measles rash may be present on admission to hospital, although the case has been notified and removed as acute pneumonia.

"The occurrence of measles in a ward for the treatment of bronchopneumonia in young children is a serious incident which must be prevented if at all possible, as the resulting mortality is always high. Medical practitioners should bear this in mind when requesting the

removal of any doubtful case to hospital, and should be on the outlook for measles in its early stages. Practitioners are also in the best position to ascertain whether any child has been exposed to recent measles infection, and it would be extremely helpful if they would report any such circumstances when requesting the removal of a case to hospital.

“During times of pressure it has been customary for the Department to utilise its staff to discriminate among patients for whom admission to hospital is requested, with particular reference to home conditions, the severity of the case, and, in children, any exposure to another infection. In view of the hospital position and the difficulties referred to, this procedure is again being adopted. It should be added, however, that when a practitioner states that a case is an urgent one requiring immediate admission it is removed forthwith, provided a bed is available.

“I am sure that medical practitioners will co-operate with this Department in utilising the available accommodation to the best advantage and will realise that measures taken to avoid difficulties are exercised in the interests of all concerned.

“A. S. M. MACGREGOR.”

The following table shows the percentage of cases removed to hospital:—

Year.	Cases Notified.	Percentage to Hospital.
1920	4,533	38
1921	3,592	46
1922	6,572	43
1923	4,465	60
1924	7,272	54
1925	6,105	59
1926	6,704	55
1927	6,252	58
1928	6,072	66
1929	8,225	58

### PULMONARY TUBERCULOSIS.

As was the case during the last influenza epidemic in 1922 the reduction in the pulmonary tuberculosis death rate, which had been in progress, was again arrested during 1929. The deaths numbered 1,025, compared with 954 in 1928, and the equivalent death rates were respectively 883 and 832 per million of the population. The effect of the severe weather conditions and the influenza epidemic at the beginning of the year is well illustrated in the following summary of the cases and deaths occurring in the first four months of the year.

The number of cases of pulmonary tuberculosis notified weekly continued in excess of the number for the corresponding weeks of the previous year until about the end of June.

Month.	1929			1928		
	Pulmonary Tuberculosis Deaths.	Pulmonary Tuberculosis Cases.	Non- Pulmonary Tuberculosis Cases.	Pulmonary Tuberculosis Deaths.	Pulmonary Tuberculosis Cases.	Non- Pulmonary Tuberculosis Cases.
January, -	112	118	64	73	132	91
February, -	107	189	84	69	171	147
March, -	135	189	120	98	177	144
April, -	67	177	83	62	121	102
	449			588		

The death rates from pulmonary tuberculosis in succeeding periods have been as follows :—

1881-1890, 2.680 per 1,000 living.	1923, - 1.014 per 1,000 living
1891-1900, 2.015            ,,	1924, - 1.006            ,,
1901-1910, 1.533           ,,	1925, - .922            ,,
1911-1915, 1.346           ,,	1926, - .861            ,,
1916-1920, 1.191           ,,	1927, - .838            ,,
1921, - 1.007            ,,	1928, - .832            ,,
1922, - 1.074            ,,	1929, - .883            ,,

The death-rates for several large towns are shown in the table which follows :—

PHTHISIS DEATH RATE PER 100,000 IN CERTAIN TOWNS.

	1913	1920	1924	1925	1926	1927	1928	1929
Glasgow,	143	106	101	92	86	84	83	88
Edinburgh,	114	85	101	95	84	90	81	85
Dundee,	116	99	85	87	81	89	80	78
Aberdeen,	109	93	91	97	75	66	71	57
London,	—	106	98	95	88	91	88	96
Liverpool,	—	141	130	130	122	110	118	121
Manchester,	—	133	118	131	119	115	110	121
Birmingham,	—	95	97	98	94	89	86	94

The highest mortality from the disease was 1,919 in Kingston ward which was followed by 1,452 in Cowcaddens and 1,326 in Calton. The lowest mortality was 79 in Cathcart.

The total number of pulmonary tuberculosis cases registered during the year was 1,804 compared with 1,724 in 1928. Of the total cases, 54 per cent. were males.

The largest number of cases registered in any ward was 106 in Gorbals, while 79 were recorded in Dalmarnock and 73 in Hutchesontown. In Langside there were only 10 cases and in Cathcart 14.

The following statistics deal with cases on the register on the lines of former years:—

Summary of cases as at 31st December, 1929:—

Total cases registered from 1st January, 1910, to

31st December, 1929, ... ..	43,932
Less—Died, ... ..	23,896

(1) Verified on notification, but subsequently—

Removed and not traced, ... .. 3,449

Removed from Glasgow, ... .. 2,854

(2) Not discovered on notification—

Not found at address given, ... .. 1,062

Notified from Poor Law Institution  
(with no fixed abode), but still  
remaining on Register, ... .. 973

(3) Subsequently taken off registers as not  
suffering from pulmonary tuber-  
culosis, ... .. 6,037

38,271

Total cases under observation at 31st December, 1929, 5,661

The number of cases registered since 1913 is summarised below:—

Year.	Cases Registered.	Year.	Cases Registered.
1913-1915 (annual average),	2,425	1925, ... ..	1,600
1916-1920        "        "	2,410	1926 (Old City), ...	1,732
1921, ... ..	2,045	1926 (Added Area),...	33
1922, ... ..	1,954	1927 ... ..	1,623
1923, ... ..	1,725	1928, ... ..	1,724
1924, ... ..	1,829	1929, ... ..	1,804

*Cases Registered during 1929.*—Of the total number of cases registered during the year, 1,627 were notified in terms of the Infectious Diseases (Notification) Act, 1889, and Tuberculosis Regulations, 1912. Thirteen were sent by the Pensions and Military Authorities, while 164 were ascertained from other sources, as shown below:—

1. *Source of Notified Cases*—

1. Occurring in private practice, ... ..	1,057
2. Occurring in public practice:—	
(a) Poor Law cases at home addresses,        42	
Poor Law cases from hospitals and	
poorhouses, ... ..	183
Poor Law cases at Dispensaries, ... ..	2
	<u>227</u>
(b) Charitable dispensaries and infirmaries, 202	
Corporation dispensaries, ... ..	141
	<u>343</u>
	<u>570</u>
Total cases notified, ... ..	1,627



2. *Source of information in cases not notified—*

(a) From admission and dismissal sheets of Poor Law Institutions, ... ..	12
(b) School Medical Officers, ... ..	21
(c) Port Local Authority, ... ..	1
(d) County Medical Officer, ... ..	18
(e) From death cards only, ... ..	112
	<hr/> 164

3. <i>From Military Authorities,</i> ... ..	13
Total cases registered, ... ..	<hr/> 1,804 <hr/>

*Places of Residence at Time of Registration.*—When a patient is notified from a home address this is visited, and if the case can be definitely located the patient is regarded as a “home” case, even although at the time of notification he is under treatment in an institution. The results of these inquiries may be summarised as follows:—

Cases traced to home addresses, ... ..	1,659
Cases at home, but not visited at request of medical practitioner, ... ..	39
Cases where only known address was an institution, ... ..	106
Cases not found at address given, ... ..	—
	<hr/> 1,804 <hr/>

*Private and Public Notifications.*—The figures given in the foregoing summary refer to the total number of cases registered during the year, while the following table refers only to notifications under the Act received regarding the 1,627 cases so notified:—

Notifications.	Private.	Public.	Total.	Percentage Public.
Primary, ... ..	1,057	570	1,627	35.0
Multiple, ... ..	145	79	224	35.0
	<hr/> 1,202 <hr/>	<hr/> 649 <hr/>	<hr/> 1,851 <hr/>	<hr/> — <hr/>

Percentage multiple to primary notifi- cations in each group, ... ..	13.7	13.8	13.7
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*Age Distribution of Cases Registered.*—This information is given in the following table for each of the three years ending 1929:—

Age		1927		1928		1929	
		M.	F.	M.	F.	M.	F.
— 5 years,	...	38	28	48	33	25	23
—10	„	31	47	52	39	47	47
—15	„	37	49	34	57	54	52
—20	„	86	128	99	120	122	149
—25	„	128	109	132	140	129	150
—35	„	190	167	197	180	182	198
—45	„	149	119	152	123	180	100
—55	„	126	60	113	67	141	55
—65	„	71	31	61	44	76	40
Over 65 years,	...	14	15	22	11	20	14
Total,	...	870	753	910	814	976	828
Grand Total,		<u>1,623</u>		<u>1,724</u>		<u>1,804</u>	

*Housing Accommodation of Patients.*—The following table gives the house accommodation at the date of registration of such patients as had home addresses. Patients who were in institutions (mostly Poor Law) at the time of notification are included along with those who could not be traced at the addresses given:—

		1927		1928		1929	
		M.	F.	M.	F.	M.	F.
1 Apartment,	...	143	136	126	146	147	139
2	„	412	393	440	393	438	422
3	„	160	121	164	149	166	168
4	„ and up,	81	74	109	100	110	73
In Institutions and not							
traced,	...	74	29	71	26	115	26
Total,	...	870	753	910	814	976	828
Grand Total,	...	<u>1,623</u>		<u>1,724</u>		<u>1,804</u>	

*Institutional Treatment.*—The following table shows admissions to institutions of patients suffering from pulmonary and non-pulmonary tuberculosis since 1922:—

Year.		Local Authority Hospitals.	Sanatoria.	Poor Law Institutions.	Total.
1922,	...	2,018	714	604	3,336
1923,	...	1,959	690	555	3,204
1924,	...	1,840	499	573	2,912
1925,	...	1,531	457	606	2,594
1926,	...	1,637	425	738	2,800
1927,	...	1,458	413	615	2,486
1928,	...	1,429	418	819	2,666
1929,	...	1,501	494	753	2,748

*Dispensary Attendances.*—The following table shows the attendances and consultations at the various tuberculosis dispensaries in each year, 1927 to 1929. All forms of tuberculosis are included:—

Dispensary.	Number of Consultations.	Primary Attendances.		Subsequent Attendances.	
		Males.	Females.	Males.	Females.
Year 1927, ...	1,236	2,441		51,406	
„ 1928, ...	1,329	2,764		51,041	
<hr/>					
Glenfarg Street,	144	251	197	3,777	2,383
Black Street,	247	213	196	3,821	3,357
Adelphi Street,	192	259	286	4,107	3,350
Acorn Street,	228	271	250	8,394	6,245
Central Area,	154	253	264	2,547	2,261
Govan, ...	313	235	239	4,204	3,579
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Year, 1929, ...	<u>1,278</u>	1,482	1,432	26,850	21,175
<hr/>					
Total, ...	...	2,914		48,015	
<hr/>					
Grand Total,	...	...	50,939		

*Home Visitation by Nurses.*—The number of home visits by nurses during the past three years has been as follows:—

1927.	1928.	1929.
48,820	46,182	39,632

*Issue of Medical Extras, Beds and Bedding, &c., to Patients under Treatment at Home.*—In 1916 the Local Authority was granted power to provide assistance in the domiciliary treatment of patients in the form of extra nourishment and bed and bedding in necessitous cases. In 1929 these grants were made in 31 cases (medical extras) and 24 cases (bed and bedding). Issues of this nature are only granted after full inquiry, and in cases where the home circumstances are reasonably satisfactory. They are not regarded in any sense as a measure of out-relief, which is always readily granted by the Poor Law Authorities when required.

*Issue of Clothing to Patients.*—The interest on the purchase price of Bellefield Sanatorium, amounting to about £400 per annum, has continued to be applied to the purpose of providing clothing for necessitous patients proceeding to sanatoria. During the year 1929 225 patients were assisted in this way, compared with 200 during 1928. The total number assisted since the inauguration of the scheme in 1916 is 2,639.

## NON-PULMONARY TUBERCULOSIS.

Tuberculosis in all its forms became compulsorily notifiable on 1st July, 1914. The subjoined table gives the number of cases of non-pulmonary tuberculosis registered during subsequent years:—

Year.	Cases Registered.	Year.	Cases Registered.
1914-15 (annual average),	1,303	1925, ...	... 1,115
1916-20 ,,	1,360	1926, ...	... 1,031
1921, ... ..	1,141	1927, ...	... 1,101
1922, ... ..	1,050	1928, ...	... 1,107
1923, ... ..	1,234	1929, ...	... 992
1924, ... ..	1,221		

The following tables show (1) the distribution of the cases registered in each year in accordance with the location of the disease and sex of the patients; and (2) distribution according to certain age-periods in each year:—

TABLE I.

SHOWING NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING 1914-1929,  
WITH LOCATION OF DISEASE AND SEX.

Year.	Glands.		Bones and Joints.		Abdomen.		Meninges.		Multiple.		Others.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1914,*	159	153	239	186	79	45	73	47	11	18	70	62	631	511
1915,	176	232	192	156	135	104	137	123	52	27	71	59	763	701
1916,	199	216	185	138	155	136	136	140	40	18	75	64	790	712
1917,	203	266	196	170	155	113	93	95	41	34	70	57	758	735
1918,	186	265	158	143	119	128	92	107	34	30	78	72	667	745
1919,	138	178	164	127	126	123	93	86	40	29	56	47	617	590
1920,	138	145	193	168	116	112	89	83	39	29	44	29	619	566
1921,	149	171	165	127	116	84	78	74	27	29	68	53	603	538
1922,	134	147	141	124	130	111	75	66	20	24	42	36	542	508
1923,	145	155	181	129	145	118	102	75	16	15	78	75	667	567
1924,	149	150	145	130	140	144	104	81	35	36	65	42	638	583
1925,	145	137	150	139	131	114	75	65	29	24	54	52	584	531
1926,	135	137	142	131	115	109	78	57	24	35	35	33	529	502
1927,	131	148	186	134	127	106	89	61	22	17	45	35	600	501
1928,	132	152	150	138	113	99	84	86	20	10	61	62	560	547
1929,	117	154	138	107	109	104	86	85	10	12	38	32	498	494

\* Figures for six months ending 31st December, 1914.



TABLE II.  
AGE DISTRIBUTION OF NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING EACH YEAR,  
SINCE COMMENCEMENT OF NOTIFICATION ON 1ST JULY, 1914.

Year.	Under 1 year.		1-5 years.		5-10 years.		10-15 years.		Over 15 years.		TOTAL.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1914, ...	60	21	132	90	140	102	134	115	165	183	631	511
1915, ...	59	49	236	161	164	140	112	108	192	243	763	701
1916, ...	64	45	244	152	149	123	108	164	225	228	790	712
1917, ...	52	48	190	134	157	156	117	149	242	248	758	735
1918, ...	30	33	163	169	137	125	129	142	208	276	667	745
1919, ...	45	28	151	109	142	123	78	136	201	194	617	590
1920, ...	57	35	143	122	128	137	110	94	181	178	619	566
1921, ...	51	35	157	111	133	122	81	94	181	176	603	538
1922, ...	38	28	175	150	103	87	71	79	155	164	542	508
1923, ...	59	19	214	165	116	112	86	79	192	192	667	567
1924, ...	50	39	212	171	96	99	103	85	177	189	638	583
1925, ...	48	22	184	144	111	103	71	77	170	185	584	531
1926, ...	28	22	162	127	109	88	63	78	167	187	529	502
1927, ...	31	28	171	102	130	82	73	77	195	212	600	501
1928, ...	29	17	152	104	115	112	83	60	180	255	559	548
1929, ...	32	27	132	102	111	95	63	66	160	204	498	494

During 1929, 992 cases were notified, compared with 1,107 in 1928, a reduction of 115. This is the first time since the non-pulmonary forms of tuberculosis were made notifiable that the number of cases registered annually has fallen to less than 1,000. The greatest decrease took place in the number of cases of tuberculosis of bones or joints, 245 being recorded against 288. In both glandular and abdominal forms of the disease the male cases notified were lower than those in the preceding year, but cases among females were slightly more numerous. Of the total cases of non-pulmonary forms of tuberculosis, 498 were males and 494 females, compared with the respective numbers of 560 and 547 during 1928. The disparity in the comparison between males and females in former years has been rather marked, as, for instance in 1927, when 600 were males and 501 females.

The reduction in the cases during 1929 occurred at all ages except for males and females under one year of age and for females between 10 and 15.

The death rate was also more favourable except with regard to abdominal tuberculosis, the rate for which was 60 per million of the population, compared with 56 in 1928, but tuberculous meningitis, with 131, is lower by nine, and "other forms," with 93, are lower by 12 than the corresponding rates for the preceding year. The total mortality rate for these causes is 284 against 301.

#### GLASGOW.—DEATH-RATE PER MILLION OF THE POPULATION.

Year.	Tuberculous Meningitis.	Abdominal Tuberculosis.	Other Forms.	Total.
1901-5, ...	319	301	258	878
1906-10, ...	416	278	255	949
1911-15, ...	285	197	183	665
1916-20, ...	210	167	170	547
1921-25, ...	163	103	122	388
1926, ...	140	67	104	311
1927, ...	142	60	99	301
1928, ...	140	56	105	301
1929, ...	131	60	93	284

#### ACTINOTHERAPY CLINIC.

*Baird Street Clinic.*—This year the clinic was interrupted owing to the Reception House being used for its original purpose. This had the effect of cutting down the number of attenders, as when the clinic reopened many did not return. It has been found that it is easier to get a patient to continue attending than to bring him back once he has stopped. In spite of the interruption, the number of cases dismissed from the clinic was up to last year's total.

As formerly, the majority of the patients treated were tuberculous, over one-third of the number suffering from adenitis and the rest being cases of lupus, tuberculosis of the abdomen, bones, or skin. Almost all the attenders received general carbon arc baths, and, where necessary, the quartz mercury vapour lamps were used, mainly as a caustic agent. The indoor accommodation was found invaluable

for children whose parents could not bring them regularly for treatment, owing to distance or home duties, and for cases requiring constant dressing.

*Adenitis.*—The only type of adenitis which did not readily yield to treatment was when softening was absent or long delayed, for example, where there were very large, firm gland masses or where the glands were small and marble-like. When softening or sinus formation occurred the results of treatment were very satisfactory, both as regards time of healing and cosmetic effect. Of course, aspiration and incision were performed where necessary.

*Lupus and Tuberculosis of the Skin.*—Lupus is, at the same time, the most satisfactory and unsatisfactory of the conditions treated. The results are excellent, but require patience. Early lupus in children clears up quickly under treatment, but with the extensive lupus of adults attendance may have to continue through two or three years. With tuberculosis of the skin, other than lupus, the beneficial results appear more quickly and with greater regularity.

*Abdominal Disease.*—The response to treatment has been fairly good, but only the milder forms of the disease were treated. It was noticed in indoor patients that, where there was a complaint of diarrhoea at home, this condition cleared up quickly under suitable dietetic measures.

*Disease of Bones, Joints, and Dactylitis.*—Except in dactylitis, the results of treatment in this group were poor. It appeared that where a sinus was present in connection with the diseased bone the chances of healing under light treatment were not good.

Of the 365 cases dismissed or ceasing treatment, 60 have been excluded from the table of results owing to having had less than one month's treatment. The miscellaneous group included a few cases of bronchitis, bronchiectasis, various skin eruptions, and tuberculosis of the larynx, but the results were variable and not altogether beneficial.

#### NON-PULMONARY TUBERCULOSIS.

##### RESULTS OF LIGHT TREATMENT AT BAIRD STREET CLINIC. OUT-PATIENTS.

OUT-PATIENTS.							Average duration of treatment (in months).		
							<div>Healed.   Improved.   Not Improved.</div>		
							Healed.	Improved.	Not Improved.
Adenitis, ...	...	66	25	29	120	6.9	7.0	3.0	
Lupus, ...	...	12	8	12	32	11.5	8.5	8.5	
Abdominal Disease, ...	...	9	—	12	21	5.5	—	2.5	
Bone and Joint Disease,	...	3	—	12	15	8.5	—	2.8	
Tuberculosis Cuti, ...	...	6	—	3	9	6.5	—	3.0	
Dactylitis, ...	...	5	—	4	9	9.4	—	5.8	
Miscellaneous, ...	...	—	—	—	43	—	—	—	
Total, ...		101	33	72	249				

## IN-PATIENTS.

	Healed.	Not Improved.	Total.	Average duration of treatment (in months).	
				Healed.	Not Improved.
Adenitis, ...	9	4	13	4.4	2.8
Lupus, ...	—	—	—	—	—
Abdominal Disease, ...	9	11	20	4.5	2.2
Bone and Joint Disease, ...	1	3	4	3.0	2.6
Tuberculosis Cuti, ...	2	—	2	3.0	—
Dactylitis, ...	3	—	3	6.3	—
Miscellaneous, ...	—	—	14	—	—
	24	18	56		

In January, 1930, there were 248 patients on the register of the outdoor clinic and 19 indoor patients—267 in all.

*Govan Tuberculosis Light Clinic.*—During 1929 there were 114 sessions, held weekly on Tuesday, Thursday and Saturday mornings. Attendances numbered 2,425—males 1,045 and females 1,380. These have much increased, and the popularity of the clinic has extended. In fact, frequent requests by general practitioners for light therapy for conditions other than tuberculous affections had to be referred to general hospitals, as not coming within the scope of this centre at present.

The patients treated numbered 329, of whom 259 attended the complete course. It is noteworthy that there is a steady rise in the number of patients in attendance from January to December.

The following table shows the conditions treated:—

	Cases.	Improved.	Not Improved.
Glands, ...	51	42	9
Lupus, ...	15	9	6
Joints (Spine, Shoulder, &c.), ...	3	2	1
Abdomen, ...	9	8	1
General, ...	3	1	2
Bone Disease (Dactylitis, Rib, Hip, Ulna, &c.), ...	11	7	4
Others (Septic Sores, Pediculosis, Chronic Nervous Disease, Post-operative Wound), ...	4	3	1
Pre-tuberculous Children, ...	12	10	2
Total, ...	108	82	26

*Clinical Conditions.*—Glands of neck and sinuses still formed the major number of the treated affections. The scraping of caseous focal glands, followed by light treatment, effected remarkable results in chronic discharging sinuses. Instead of aspirations, which require to be frequently repeated with nervous shock to the patient, incision and evacuation was practised. This proved successful, and in no case did the lesion fail to heal with light treatment. This is of special note in view of this unorthodox surgical procedure. The irritative eczema found around neglected sinuses disappeared rapidly with local

therapy. Striking results with catarrhal lupus were also obtained, the method adopted being to push the local quartz mercury vapour lamp exposure until a marked reaction took place. In one case of facial lupus extensive sloughing took place, which healed up quickly with a pale smooth scar of the cheek in place of the previous ugly spreading granuloma.

An example of practical prophylactic use was demonstrated by a scarlet fever dismissal from hospital with a persistent sinus of a cervical gland, which responded to treatment with light after showing prolonged indolence in hospital. A few cases of septic adenitis associated with *pediculosis capitis* yielded quickly to actino-therapy, combined with disinfection of the scalp, as did other cases of acne comedones, which had broken down or were associated with old keloid scars.

An interesting feature of this year's work is the treatment by general exposure to ultra-violet light of the pre-tuberculous child, mainly referred to the tuberculosis dispensary by doctors on account of low general nutrition, rickets, abdominal distension, &c. Several showed a diffuse cervical adenopathy alone. (One of these subsequently developed a broncho-pneumonic phthisis at an indoor clinic, and another case a definite tubercular adenitis.)

Attendance of surgical tuberculous patients awaiting admission to hospital was encouraged, as in this way close observation, together with dressings and light treatment, was ensured at least three times per week.

*Ill Effects Noticed.*—The nursing staff complain of a pigmentation of their skin from the exposures to the light. Cosmetically this may not be desirable, but certainly it has had no injurious personal effects. There were several instances of erythema from over-exposure, followed by desquamation. This was never serious. Pigmentation resulting from light was noted in three cases. The most marked one proved, on investigation, to be of Australian aborigine stock. No eye complaints were made. The presence of valvular disease of the heart, albuminuria or lung disease was generally considered a contra-indication to treatment. In many cases hydro-therapy would have enhanced the effect of the treatment received.

## X-RAY DEPARTMENT, RUCHILL HOSPITAL.

By DR. FERGUS L. HENDERSON, RADIOLOGIST TO THE CORPORATION HOSPITALS.

The work in the X-ray department at Ruchill and Robroyston Hospitals increased considerably during the past year, and, in all, 3486 patients were examined. This was largely due to an increase in the number of cases sent to Ruchill for diagnosis, and to a more careful investigation of the cases in Ruchill Hospital.

The aid given by a good radiogram of the chest is now fully realised by those responsible for the diagnosis and treatment of the patients,



and it is difficult to over-estimate the importance of following the progress of a tubercular chest by a series of radiograms taken at regular intervals.

The equipment of the X-ray department at Ruchill Hospital was brought up to date during the last months of the year. From 1917, when the department was opened, until November, 1929, the original induction coil was used for the production of the high tension current, and for the past few years the work has been carried on under great difficulties. Recent developments in X-ray technique have been on two lines, first, decreasing the time of the exposure and, second, increasing the distance between the tube and the patient. The second of these results in a much more accurate picture of the chest being obtained, as the rays used in photographing a chest at a distance of 6 feet are practically parallel, while those used for photography at 28 inches are markedly divergent. The short distance technique produces great distortion, whereas in a film taken at 6 feet the measurement of the heart shadow, &c., is for all practical purposes the same as the actual size of the organ radiographed. Unfortunately, however, this increase in distance increases the exposure very greatly, as the intensity of the X-rays varies inversely with the square of the distance between the tube and the film, so that if an exposure of 30 milliamperere-seconds is necessary for a particular case taken at 3 feet distance, an exposure of 120 milliamperere-seconds would be required for the same case taken at 6 feet. The quality of the negative taken at 6 feet distance is, however, so much finer than that of the short-distance negative, that it is gradually becoming a uniform practice for chest photographs to be taken at the former distance.

The problem of how to get sufficient energy to produce the required current for taking a distance chest radiogram in a reasonably short time is a very difficult one. The apparatus specially built for Ruchill X-ray department by Messrs. Newton & Wright of London is designed to give a current of 1,000 milliamperes at a kilovoltage of 56. This is done by means of a 3-phase apparatus rectified by six valves, which produces a practically pulseless current. Since this apparatus was installed I have been remarkably impressed by the steadiness of the current working at anything from 40 to 80 kilovolts. The building of such an apparatus is no small task, as it has been found very difficult to obviate a high voltage drop when a heavy current is put through the X-ray tube, that is to say, that many transformers will work quite well up to 70 or 80 milliamperes, but when a current of 200 milliamperes is used the voltage drop is so great that no useful radiogram can be obtained.

For the benefit of others who may be considering rapid distance chest work, the importance of this question of voltage drop cannot be over emphasised. I find at Ruchill that if the kilovolt meter is set at 58 and a current of 200 milliamperes is put through the tube the kilovolt meter reads 55 during the exposure. This is a most satisfactory result, and one which makes accurate X-ray work possible.

The other difficulty, however, is that at the present time there are very few tubes on the market which will stand a heavy current. I have already experimented with one tube, a 20-k.w. tube, which was supposed to stand 1,000 milliamperes for one-tenth of a second, but it was very soon put out of action at a much smaller rating than by this new powerful apparatus. This question of tubes is the main stumbling block at present. The 3-phase apparatus is very much harder on a tube than an ordinary 1-valve or 4-valve set. Another difficulty is that the highly powered tubes have a large focal spot in order to dissipate the tremendous heat which is generated by the passage of a heavy current, while this large focal spot tends to give a less well-defined picture than a less powerful tube with a smaller focal spot.

It is also found that there are great differences between various makes of time switches, and we read of exposures of 10 and 20 and 30 milliamperes-seconds being used to produce what are termed satisfactory 6-foot chest radiograms. This is an absolute impossibility. A good chest radiogram should not be taken at more than a kilovoltage of 55, and I have proved conclusively that at that kilovoltage, from 100 to 140 milliamperes-seconds are required to get a good film of an adult chest. At shorter distances very rapid chest work can be done and beautifully sharp films of the heart are obtained, but I have not yet succeeded in obtaining a tube which will enable an instantaneous film to be taken at a distance of 6 feet, but it is felt that the apparatus now installed at Ruchill will be able to do this when the more powerful tube is made.

These technical questions have been dealt with in this report at some length because they are of the utmost importance and worthy of the fullest consideration before any new apparatus is purchased for chest work.

Since the apparatus was installed chest films of adults have been taken in from .4 to .6 of a second, and, working with a 10-k.w. tube, excellent results have been obtained, but it is too early yet to report fully upon these newer methods.

A 2-metre screening stand made by X-rays, Ltd., was added to the department at Ruchill in June, 1929. This has improved the technique in all cases taken in the upright position, and has made it possible to vary the distance of tube to film from 28 up to 78 inches. This has greatly improved the work.

A Wheatstone stereoscope has also been added to the equipment, an instrument which has proved extremely useful in many obscure conditions. It is a particularly well-constructed form of stereoscope, and I have not in my experience come across another instrument in which the proper stereoscopic effect was obtained so easily.

FERGUS L. HENDERSON.

*Ruchill Hospital.*—The X-ray photography and treatment carried on at Ruchill Hospital by the Consulting Radiologist has been fully described in the Reports for the past two years. The following is a summary of the work done during 1928-29:—

	1928.	1929.
X-ray Photographs taken,...	2,476	5,496
Of which—		
Hospital Cases, ...	812	552
Out-door Cases, ...	1,664	2,196
Treatment by X-ray—		
Number of Out-door Patients treated for		
Glands, ...	60	25
Number of Out-door Patient Attendances,	875	344
Treatment by Mercury Vapour Lamp—		
Number of Out-Patients treated—		
Glands, ... 4 }	8	2 }
Lupus, ... 4 }	2	2 }
Number of Out-door Patient attendances,	297	223
Number of Ward Patients, ...	50	31
Number of Ward Patient Attendances, ...	1,246	737

## SECTION VI.

## VENEREAL DISEASE.

*General.*—The treatment centres under the Venereal Disease Scheme have all been working at full pressure during the year, and although the actual number of new patients is slightly less than that of last year, the aggregate attendances at the clinics and the number of patients found on examination not to be suffering from any venereal disease are both appreciably increased.

The only major alteration to be noted is the transfer of the female treatment centre from Bellahouston Dispensary to Govan Town Hall. The rooms thus vacated were, after alteration, added to the accommodation for males, which at Bellahouston had hitherto been very inadequate.

*Work of the Clinics.*—Table I. gives particulars of new patients admitted to the various sections of the scheme during the year. On examination of the returns from the different centres it is found that the *ad hoc* out-patient centres, Black Street, Bellahouston, and Broomielaw, on the male side, and Baird Street and Govan, on the female, cater for a different type of case from that dealt with at General Hospitals, Child Welfare Centres, &c. The figures for the *ad hoc* centres are therefore given together. Amongst males, these clinics deal much more largely with patients in the early stages of venereal disease than the hospital clinics. In the case of females, the symptoms of early syphilis are often obscure, a factor which in many instances delays application for treatment till later signs of the disease appear, but it will be seen that, in the female *ad hoc* centres, a much larger proportion of the cases of gonorrhœa are in the earlier stages than is the case in the other centres. There seems, therefore, to be no doubt that these special centres are fulfilling adequately their purpose in the scheme with regard to the treatment of early cases and cases in the more acute infective stages of the disease, whereas the General Hospitals tend to concentrate upon the later or “medical” aspects.

The Eye Infirmary Clinic deals entirely with late and congenital syphilis.

TABLE I.

NEW PATIENTS ADMITTED TO THE VARIOUS TREATMENT CENTRES IN 1929.

	Sex.	Primary Syphilis.	Secondary Syphilis.	Late Syphilis.	Congenital Syphilis.	Extra-genital Infection.	Acute Gonorrhoea.	Chronic Gonorrhoea.	Soft Chancre.	Syphilis and Soft Chancre.	Syphilis and Gonorrhoea.	Gonorrhoea and Soft Chancre.	Balanitis.	Veneral Warts.	Stricture.	Other than Venereal.	Total.	Aggregate Attendances.	
OUT-PATIENTS—																			
Hoc Centres—																			
Male—																			
Black Street, Broomielaw, and Bella-houston, ...	M.	290	117	218	3	5	1,465	354	65	2	58	2	274	23	20	762	3,658	129,981	
Female—																			
Baird Street and Govan,	M.	—	—	—	11	—	—	—	—	—	—	—	—	—	—	13	24	359	
	F.	14	25	63	17	—	90	32	—	—	10	—	—	—	—	77	328	13,512	
Other Centres—																			
Lock Hospital,...	M.	—	—	—	69	—	—	—	—	—	—	—	—	—	—	—	69	530	
	F.	3	22	50	70	—	17	206	—	—	117	—	—	—	—	4	489	16,738	
Western Infirmary,	M.	22	10	108	3	2	8	17	3	—	1	—	4	—	—	38	216	5,227	
	F.	7	12	43	10	2	23	29	3	—	5	—	—	—	—	21	155	6,998	
Victoria Infirmary,	M.	—	1	8	—	—	—	—	—	—	—	—	—	—	—	1	10	432	
	F.	—	7	9	—	—	—	—	—	—	—	—	—	—	—	—	16	315	
Eye Infirmary,	M.	—	—	43	31	—	—	—	—	—	—	—	—	—	—	—	74	3,358	
	F.	—	—	30	37	—	—	—	—	—	—	—	—	—	—	—	67	2,888	
Royal Hospital for Sick Children,	M.	—	—	—	5	—	—	—	—	—	—	—	—	—	—	59	64	767	
	F.	—	—	11	12	—	1	—	—	—	—	—	—	—	—	65	89	1,675	
De-Natal Centres—																			
Maternity Hosp.,	M.	—	—	—	2	—	—	—	—	—	—	—	—	—	—	2	4	14	
	F.	2	1	31	1	—	9	7	—	—	2	—	—	—	—	71	124	2,073	
Child Welfare Clinics, ...	M.	—	—	—	5	—	—	—	—	—	—	—	—	—	—	24	29	173	
	F.	—	1	44	12	—	16	27	—	—	1	—	—	—	—	95	196	2,224	
<hr/>																			
Total No. of Out-Patients,		338	196	658	288		9	1,629	672	71	2	194	2	278	23	20	1,232	5,612	187,264
<hr/>																			
IN-PATIENTS—																			
Providere Hospital,	M.	2	3	5	—	—	26	1	6	—	2	—	1	—	1	1	48	—	
Lock Hospital, ...	M.	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	25	—	
	F.	2	—	3	28	—	7	111	—	—	54	—	—	—	—	—	205	—	
Other Institutions,	M.	1	—	18	4	—	—	—	—	—	—	—	—	—	—	—	23	—	
	F.	—	—	21	6	—	4	2	—	—	—	—	—	—	—	1	34	—	
<hr/>																			
Total No. of In-Patients,		5	3	47	63	—	37	114	6	—	56	—	1	—	1	2	335	—	
<hr/>																			
Grand Total, ...		343	199	705	351		9	1,666	786	77	2	250	2	279	23	21	1,234	5,947	—

The centre at the Maternity Hospital was opened for the purpose of diagnosis and treatment of women during pregnancy, but the principle of treating the disease wherever it arises has been adhered to, and a considerable number of women continue treatment at this centre after pregnancy has terminated. For confinement, venereal



cases are not admitted into the Maternity Hospital, but to a special ward in the Lock Hospital which has been set aside for cases belonging to the practice of the Maternity Hospital.

It is important to note that, for diagnosis and treatment of venereal disease, the *ad hoc* out-patient centres deal with about two-thirds of all cases treated under the scheme.

*In-Patients.*—Under the heading “In-Patients” in Table I. only new patients are included, that is to say, patients whose first treatment commenced on their admission to the wards. In order to show the total number of patients admitted to the wards of the various institutions, there must be added the numbers transferred from the outdoor treatment centres.

Table II. shows the *total number* of patients dealt with in the wards of Belvidere Hospital, the Lock Hospital, Baird Street Reception House, and other hospitals.

TABLE II.

SHOWING TOTAL NUMBER OF PATIENTS ADMITTED FOR IN-PATIENT TREATMENT.

	Sex.	Primary Syphilis.	Secondary Syphilis.	Late Syphilis.	Congenital Syphilis.	Extra-genital Infection.	Acute Gonorrhoea.	Chronic Gonorrhoea.	Soft Chancre.	Syphilis and Soft Chancre.	Syphilis and Gonorrhoea.	Gonorrhoea and Soft Chancre.	Balanitis.	Venereal Warts.	Stricture.	Other than Venereal.	Total Admissions.	Aggregate Days' Residence.
Belvidere Hospital,	M.	9	13	22	—	—	140	1	22	3	2	—	4	5	6	1	228	7,353
Baird Street, ...	F.	2	1	5	1	—	17	3	—	—	—	—	—	—	—	1	30	1,900
Lock Hospital, ...	M.	—	—	—	32	—	—	—	—	—	—	—	—	—	—	—	32	2,787
	F.	2	2	7	33	—	8	178	—	—	97	—	—	—	—	—	327	19,067
Other Hospitals, ...	M.	1	—	33	11	—	—	—	—	—	—	—	—	—	—	—	45	1,753
	F.	—	—	28	14	—	—	—	—	—	—	—	—	—	—	—	42	1,476
Total, ...		14	16	95	91	—	165	182	22	3	99	—	4	5	6	2	704	34,336

*Stage of Disease.*—The clinicians seem agreed that the amount of early disease seen at the clinics is relatively increasing; this applies specially to syphilis.

*Extra-Genital Infection.*—Nine cases of syphilis with extra-genital infection were noted, and this represents 0·6 per cent. of the syphilis cases.

*Congenital Syphilis.*—351 new cases of congenital syphilis were discovered and treated during the year. The age incidence of these can be seen by referring to Table IV. This number represents about 1·7 per cent. of the total annual births in the city.

This is one of the serious aspects of venereal disease, and one on which emphasis should be laid. Of the congenital cases, 138 were under one year old when brought to the treatment centre. One may compare this number with the number of pregnant women who had

treatment for syphilis under the scheme and whose pregnancies terminated during 1929. There were 82 such cases. This contrast seems to indicate, even amongst cases known and within the confines of the scheme, how incomplete are the efforts to prevent the spread of syphilis to the younger generation.

On the basis of the figures for 1929 and those of former years, in addition to the 138 congenital cases under one year, one has to look forward to over 200 additional cases whose disease was not manifest during the first year of life but will show itself later. Further, many cases are unrecognised at any time, and many are never treated at a public clinic, so that an unknown quantity falls to be added to these figures. It follows that the number of syphilitic women requiring treatment during pregnancy must be at the very least three times, and possibly as many as six or eight times, the number at present treated. On the other hand, it seems to be the experience of those best able to judge that the amount of congenital syphilis in Glasgow is undergoing reduction from year to year. It is worthy of remark that the number of congenital syphilis cases brought for treatment during the year is greater than the number of cases of primary syphilis in adults. For the reasons given, the volume of congenital syphilis in the city is extremely difficult to assess.

*Treatment of Pregnant Women.*—The results of the treatment of pregnant women are set down in Table III. in relation to the amount of treatment given, and the period at which treatment commenced.

TABLE III.

SHOWING RESULTS OF TREATMENT OF PREGNANT WOMEN IN BAIRD STREET, GOVAN, LOCK HOSPITAL, AND MATERNITY HOSPITAL CENTRES.

## RESULT.

Injections.	Period Treatment commenced.	Healthy Baby.	Infected Baby.	Death within one month.	Still- birth.	Abortion and Miscarriage.	Total.
At treatment, ...	—	7	—	3	1	5	16
- 6, ...	...- 3 months, ...	2	2	—	—	—	4
	- 6    "    ...	3	—	2	1	—	6
	- 9    "    ...	15	2	2	1	1	21
- 12, ...	...- 3 months, ...	—	1	—	—	—	1
	- 6    "    ...	14	—	—	—	—	14
	- 9    "    ...	7	2	—	—	—	9
- 18, ...	...- 3 months, ...	2	—	—	—	—	2
	- 6    "    ...	2	—	—	—	—	2
	- 9    "    ...	—	—	—	—	—	—
Or 18,	...- 3 months, ...	2	—	—	—	—	2
	- 6    "    ...	1	—	—	—	—	1
	- 9    "    ...	—	—	—	—	—	—
Total, ...	...	55	7	7	3	6	78

In addition to the above, the results in four cases were not known.

Of those who had no treatment during pregnancy, only seven out of sixteen produced apparently healthy babies, whereas, among those who had more than seven weeks' treatment (expressed in the Table by seven or more injections), 28 out of 31 gave birth to children to all appearances free from hereditary taint. This affords a striking testimony to the efficacy of anti-syphilitic treatment in pregnancy.

*Age Incidence of Venereal Disease.*—The following table (Table IV.) gives the age incidence of cases which attended the various centres during the year.

TABLE IV.

## AGE INCIDENCE OF NEW CASES, 1929.

	—1	—5	—15	—20	—25	—35	+35	Total.
Primary Syphilis, ...	—	—	2	15	69	159	98	343
Secondary Syphilis, ...	—	—	1	2	41	101	54	199
Late Syphilis, ...	—	—	4	13	35	196	457	705
Congenital Syphilis, ...	138	87	59	38	15	11	3	351
Extra-genital Infection, ...	—	—	—	1	4	4	—	9
Acute Gonorrhœa, ...	2	2	17	66	434	810	335	1,666
Chronic Gonorrhœa, ...	—	13	59	105	159	283	167	786
Soft Chancre, ...	—	—	—	4	22	33	18	77
Syphilis and Soft Chancre, ...	—	—	—	—	2	—	—	2
Syphilis and Gonorrhœa, ...	—	—	8	41	73	69	59	250
Gonorrhœa and Soft Chancre, ...	—	—	—	—	1	1	—	2
Balanitis, ...	—	—	—	31	104	102	42	279
Venereal Warts, ...	—	—	—	2	11	9	1	23
Stricture, ...	—	—	—	—	—	4	17	21
Other than Venereal, ...	137	39	25	57	226	469	281	1,234
Totals,...	277	141	175	375	1,196	2,251	1,532	5,947

*Treatment.*—With regard to syphilis a uniform mode of treatment of uncomplicated primary and secondary cases in otherwise healthy adult males has been put into operation in all the major clinics. It is felt that, in time, this will produce a body of statistics which may be usefully employed as a standard for future guidance in trying out new drugs and new groupings of current remedies. Treatment by "914" preparations along with bismuth or mercury is found to yield better results than those obtained by the separate administration of these remedies.

There is a tendency to regard mere Wassermann-positiveness in certain types of syphilis, as, for example, in elderly women with no symptoms, as not indicating any particular necessity for treatment with a view to altering the Wassermann reaction. Some are of the same view with regard to men, but the increased susceptibility of the male to the late manifestations of syphilis renders extreme caution necessary, and makes it desirable to keep such men under close observation. Indeed some of the clinical officers will not discharge a syphilitic patient, but request him to return six-monthly or annually for an overhaul.

In gonorrhœa there is a growing belief that over-treatment with irrigation increases the liability of the patient to secondary infection. Diathermy is now being used at Black Street, and skilled surgical methods are being more and more adopted.

*Ophthalmia Neonatorum.*—During the year 1929, 640 cases of ophthalmia neonatorum were notified; of these, 30 were confirmed as being gonococcal in origin. Certain cases which cannot be efficiently dealt with in their own homes are afforded indoor treatment at Baird Street Reception House, in a ward set aside for the purpose. When possible, the mothers of breast-fed infants are also admitted. During the year 55 babies and 23 mothers were admitted to Baird Street Reception House. The treatment of ophthalmia in young babies is a highly specialised procedure, and requires very careful training on the part of the nurses who do this work.

No cases of blindness of an eye occurred during the year. There were two cases where there was a slight corneal opacity in one eye.

*Issue of Salvarsan Substitutes to Private Practitioners.*—The number of doses of Salvarsan Substitutes issued to private medical practitioners remains about the same as for the previous year. 1,711 doses were issued to 47 doctors, against 1,679 doses to 43 doctors during 1928.

*Defaulting from Treatment.*—Table V. gives the number of defaulters before and after completing treatment during the year 1st June, 1928, and 31st May, 1929, along with the numbers dismissed and transferred. It should be noted that many of these latter are transfers from one centre to another within the scheme, so that some of them are not ultimately disposed of but may be shown later as dismissals or defaulters.

TABLE V.

SHOWING NUMBERS OF DEFAULTERS AND DISMISSALS FROM 1ST JUNE, 1928, TO  
31ST MAY, 1929.

	Syphilis.		Gonorrhoea.		Soft Chancre.		Mixed Infections.		Conditions other than Venereal.		Total
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males. Fem.
Number of persons who, at the commencement of the year, were under treatment or observation for—	1,151	1,134	984	319	23	1	69	159	—	—	2,227 13
Defaulters returning, ...	56	98	49	109	—	—	2	117	—	—	107 4
Transfers from other Centres, 125	190	222	257	16	—	20	183	—	1	383	
Cases in which treatment or observation was commenced during the year, 922	577	2,287	578	72	1	65	179	877	493	4,223 1	
Total, ...	2,254	1,999	3,542	1,263	111	2	156	638	877	494	6,940 46
Number of persons who ceased to attend the Centre—											
(a) before completing a course of treatment for— ...	507	196	1,147	183	37	—	23	25	—	—	1,714 4
(b) after completing a course of treatment but before final tests as to cure of—	173	368	326	132	7	1	8	53	—	—	514 4
Number of persons transferred to other Treatment Centres after treatment for— ...	186	193	309	303	29	—	19	176	—	—	543 2
Number of persons discharged from the Centre after completion of treatment and observation for— ...	61	63	604	142	19	—	4	45	—	—	688 20
Died, ...	1	5	—	—	—	—	—	—	—	—	1 5
Number of persons who, at the end of the year, were under treatment or observation for— ...	1,326	1,174	1,156	503	19	1	102	339	—	—	2,603 27
Total, ...	2,254	1,999	3,542	1,263	111	2	156	638	—	—	6,063 22



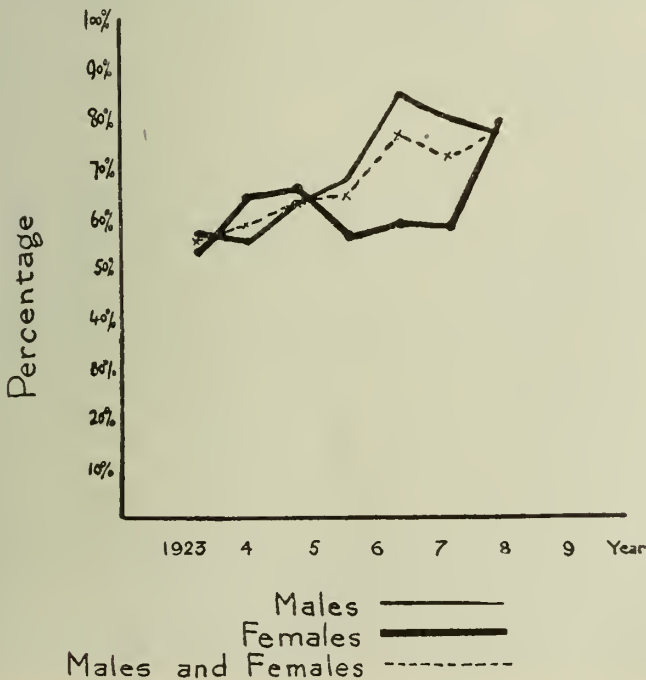
Table VI. gives the number of cases defaulting annually from 1923 to 1929, together with the total dismissals, *i.e.*, defaulters + medical dismissals, and the percentage of defaulters to total dismissals. Fig. 1 expresses the percentage of defaulters to total dismissals in graphic form.

TABLE VI.

SHOWING PERCENTAGE OF DEFAULTERS TO TOTAL DISMISSALS  
FROM THE CLINICS—1923-1929.

		Defaulters.		Defaulters+Dismissals.		Percentage of Defaulters to total Dismissals.		
		Male.	Female.	Male.	Female.	Male.	Female.	Both.
1923,	...	2,080	1,019	3,681	1,916	56.5	53.1	55.3
1924,	...	1,547	1,062	2,796	1,649	55.3	64.4	58.6
1925,	...	2,013	1,086	3,216	1,650	62.5	65.8	63.7
1926,	...	2,065	747	3,043	1,326	67.8	56.3	64.1
1927,	...	2,446	803	2,901	1,368	84.3	58.7	76.1
1928,	...	1,770	755	2,213	1,295	79.9	58.3	71.9
1929,	...	2,228	958	2,917	1,213	76.3	78.9	77.1

GRAPH SHOWING RATIO (EXPRESSED AS PERCENTAGE) OF DEFAULTERS TO TOTAL DISMISSALS FROM THE CLINICS, *i.e.*, TO REGULAR DISMISSALS + DEFAULTERS.



Defaulters represent 77 per cent. of all dismissals amongst males and 74 per cent. amongst females. For every patient who conscientiously completes treatment and observation as to cure three desert prematurely. In the case of male syphilis 18 out of 19 cases leaving the clinics are technically defaulters. Of male gonorrhœa patients, two out of every three dismissals are so by default. Female syphilis patients show better results than the males, and in gonorrhœa females are much on a par with males. Figures hitherto published with respect to the numbers of defaulters have been somewhat misleading for this reason, that many returns are based on data given in the V.R.I. form and show defaulters as a percentage of total cases treated during the year, including old, new and return cases. This leads to a considerable underestimate. It would be much better to show defaulters in relation either to new cases or total dismissals. The following table (Table VII.) shows these figures for the period 1st June, 1928, to 31st December, 1929.

TABLE VII.  
SHOWING RELATIONSHIP OF DEFAULTERS TO NEW CASES AND TO TOTAL DISMISSALS FROM 1st JUNE, 1928, TO 31st DECEMBER, 1929.

	Syphilis.		Gonorrhœa.		Soft Sore.		Mixed Infections.		Total.		To
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
New cases, ... ..	1,528	918	3,590	930	123	3	105	295	5,346	2,146	7.4
Dismissals (treatment completed),	78	124	920	223	34	—	5	59	1,037	406	1.4
Defaulters (treatment not completed),	800	297	1,677	265	53	—	59	30	2,589	592	3.1
„ (treatment complete, but before tested as to cure),	308	509	637	162	14	3	17	93	967	767	1.7
Total defaulters, ... ..	1,108	806	2,314	427	67	3	76	123	3,565	1,359	4.9
Defaulters and dismissals, ... ..	1,186	930	3,234	550	101	3	81	182	4,602	1,765	6.3
Percentage of defaulters to new cases, ... ..	72.5	87.8	65.0	35.2	55.3	100	72.5	41.75	66.7	63.3	6.1
Percentage of defaulters to total dismissals, ... ..	93.5	86.7	71.5	77.6	66.4	100	93.7	68.0	77.5	77.1	7.1
Percentage of defaulters (treatment not completed) to total dismissals, ... ..	67.5	32.0	51.8	48.2	52.5	—	72.7	16.6	56.3	33.6	5.0
Percentage of defaulters (treatment completed) to total dismissals, ... ..	26.0	54.7	19.7	29.4	13.9	—	21.0	51.4	21.2	43.5	2.1

Also, it has been the custom formerly to give the numbers of defaulters as a whole without any indication as to the stage of default or the possible reasons why the patient ceased treatment. In an attempt to elucidate these questions an investigation was made into the records of 400 male defaulters and 100 females; the males from Black Street, Broomielaw, and Bellahouston and the females from Baird Street.

Dr. R. J. Peters submits the following notes on defaulters :—

*Investigation into the Subject of Defaulting.*—Ever since the inception of the various Venereal Disease Schemes the problem of the defaulter from treatment has greatly exercised the local authorities. It is the prevalent belief of all concerned, both lay and expert, that the good done by the public application of modern methods of treatment is being, to a large extent, nullified by the casual attitude of many patients who fail to attend the centres until they are pronounced free from disease. The extent to which defaulting takes place varies somewhat in different centres and in different areas, but it is a marked feature all over the country, and is in Glasgow of much greater magnitude than it was when the Venereal Disease Schemes were first brought into operation. This does not indicate a lessened efficiency, but is due to lack of uniformity from year to year as to the definition of a “defaulter,” which in turn depends upon the standard of cure adopted and the faithfulness with which that standard is adhered to. These points can readily be appreciated in regard to Glasgow, when one considers that the aggregate attendances per patient have increased from 24·3 to 40 since 1923, while the percentage of patients returned as defaulters has risen from 55·3 to 77·1. Medical discharges of cases cured have fallen from 1767 to 938 per annum in the past five years.

A patient is now considered to be a defaulter if he or she fails to attend for treatment for three months, excluding, of course, the case which has been placed by the physician on a rest period of longer than that time.

Among the fallacies in the returns on this subject it is sometimes urged that a patient may transfer from one centre to another without the knowledge of those in charge of the clinic. This, however, is not so frequent as to seriously vitiate the data.

Roughly, 5,000 fresh cases of venereal disease present themselves each year for treatment at the various centres in Glasgow, and a number equal to about 60 per cent. of these new patients during the same period break loose from the clinics before they are certified to be cured, that is before they have completed the necessary treatment and observation as to cure. In round numbers, 1,000 cases are annually dismissed as cured, but the number of defaulters is three times that figure. Of the total patients, old and new cases together, who are treated at the centres during the year, over 30 per cent. default, under 15 per cent. are either dismissed cured or are transferred to other centres, and the remainder, about 50 per cent., continue on to the following year. This rough computation serves to show how the numbers have been maintained from year to year. The various components of these figures vary considerably each year, and, owing to changes in standards and personnel, the more recent returns are not strictly comparable with those of the earlier years of the scheme; but nevertheless, the annual turnover of patients has remained remarkably uniform throughout. The efficiency of a scheme where for every 100 new cases which come for treatment some 60 cases default, cannot be said to be satisfactory. Numbers of these defaulters undoubtedly

return for further treatment; for example, half of the female defaulters in 1928 returned at some time in 1929, mainly on account of the zeal of the nurse-almoner, but nevertheless these patients cannot be considered to be carrying out their treatment according to plan, since there is a gap of three months in their attendance for which no explanation is forthcoming.

It is probably more correct to consider defaulters in relation to total dismissals, *i.e.*, defaulters plus cases medically discharged rather than in relation to new cases. The former would certainly be the proper course, but for the fact that the criterion of cure has evidently altered very considerably during the past five years, as indicated by the drop in numbers of cases medically discharged; whereas the annual number of new cases has remained almost constant..

A point worth mentioning is that a certain percentage of the dismissals are patients who have been suffering from diseases other than syphilis and gonorrhœa, namely balanitis and soft sore, diseases which are of considerably less importance, which require much less treatment, and which do not involve the patient in long periods of treatment and observation when there is nothing to be detected clinically. Such cases numbered 349 in 1929, so it will be readily seen how they introduce a factor which falsifies the returns very gravely. The number of cases of syphilis and gonorrhœa which complete full treatment and observation is small.

On the other hand, there is the consideration that even defaulters have, in a large number of cases, had a considerable amount of treatment during which they are at least rendered much less infective than they would be without any attention. Possibly medical standards are too severe when applied to the mass, although amply justifiable in individual cases.

In view of all this, it seemed very desirable to scrutinise what information is available from all possible sources about the defaulter. Official figures are very difficult to interpret without close examination and considerable knowledge of the working of the scheme. No inkling is given of the patient's condition at default, nor is anything known as to his reasons for defaulting. For the purpose of collecting data on these and other points, various sample groups of defaulters were chosen and information regarding each case was obtained as completely as possible. In male cases, the person probably most in the confidence of the patient is the clinic attendant, and his personal knowledge was fully drawn upon to augment what was obtainable from the patient's case records and from other sources. Amongst the females the nurse-almoner personally investigated each case.

Samples were selected from three different sources. The first group consisted of 400 male defaulters from the *ad hoc* centres, Black Street, Broomielaw, and Bellahouston. The second group, 100 cases, was from the female *ad hoc* centre at Baird Street. The third group was taken from the clinic at the Western Infirmary and consisted of 100 males and 100 females.



An attempt was made to assign to each patient some reason for his default under the following headings:—

- (1) No apparent reason.
- (2) Non-return after rest period, or, what comes to much the same thing —patient presumed himself cured.
- (3) Employment. That is to say, the patient's employment was such as to prevent him from attending.
- (4) Accidents in treatment. A patient may, by reason of some untoward incident in the course of treatment, be afraid to return.
- (5) Intercurrent illness.
- (6) Prolonged treatment. A patient may have attended for a long period—arbitrarily fixed in this enquiry at eighteen months—before default. The fact that treatment is so prolonged may be taken as a cause of default just as an accident in treatment. In either case the patient may regard the treatment as unsatisfactory.
- (7) Deterioration of general health during treatment, *e.g.*, a cardiac condition in tertiary syphilis.
- (8) Psychological. Patient defaulted, say, because of apprehension of some operative procedure. He may have been mentally incapable of appreciating the reason why he should have continued treatment, or he may not believe in the medical profession.
- (9) Transfer to home or other treatment.

Some slight modifications of the above were introduced to meet the special circumstances of the female patients.

The most that one can do with information obtained in the above manner is to use it to illustrate the question of defaulting. In an inquiry of this kind, scientific accuracy is impossible, but one must remember that most information available about venereal disease from this point of view is equally if not more vague. Nevertheless, the enquiry indicated lines of investigation which might with advantage be taken up in the future.

The first group consisted, as already mentioned, of 400 males cases who had irregularly dismissed themselves from the male *ad hoc* centres, Broomielaw, Bellahouston, and Black Street. The Glasgow cases numbered 348, and 52 were domiciled beyond the city boundary. This ratio, 1 : 7 roughly, of outside cases to Glasgow cases, when compared with the ratio of total cases from outside to total Glasgow cases, viz., 1 : 7 indicates that distance from the centre has little to do with default. The following Table VIII. shows some of the results of the investigation.



TABLE VIII.

SHOWING DEFAULTERS FROM MALE TREATMENT CENTRES, BLACK STREET, BROOMFIELD, AND BELLARHOUSTON,  
IN RELATION TO DISEASE AND APPARENT OR ASSUMED CAUSE OF DEFAULT. 400 CASES SCRUTINISED.

Apparent reason why Patient Defaulted,	Primary.	Second-ary.	Syphilis.	Congenital.	Gonorrhoea.	Soft Sore.	Syphilis and Soft Sore.	Syphilis and Gonorrhoea.	Gonorrhoea and Soft Sore.	Balanitis.	Veneral Warts.	Stricture.	City Cases.	Cases from beyond Boundary.	Total.	
1. No apparent reason, ...	12	8	22	—	74	19	3	—	6	—	14	1	—	137	22	159
2. Non-return after rest period, ...	4	4	5	1	98	29	2	—	4	—	6	2	2	141	15	156
3. Employment (Distance, hours, &c.), ...	3	—	1	—	13	10	3	—	3	—	—	—	—	29	4	33
4. Accidents in treatment,	3	—	6	—	—	—	—	—	1	—	—	—	—	9	1	10
5. Intermittent illness, ...	—	2	3	—	—	—	—	—	1	—	—	—	—	6	—	6
6. Prolonged treatment, ...	1	—	2	1	—	3	—	—	1	—	—	—	—	8	—	8
7. Deterioration in health during treatment, ...	—	—	2	—	—	—	—	—	—	—	—	—	—	2	—	2
8. Psychological, ...	1	—	1	—	1	1	—	—	—	—	—	1	—	4	1	5
9. Transferred to Home or other treatment, ...	1	—	3	—	11	4	—	—	—	2	—	—	—	12	9	21
Total, ...	25	14	45	2	197	65	8	—	16	—	22	4	2	348	52	400

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The question of the capacity of the venereal patient to remain sexually continent is an interesting one. One of the most disconcerting features of the Venereal Diseases Scheme is the number of men who, while under treatment, undergo fresh exposures; and the question arises as to whether the defaulter is any worse than the regular attender in that respect. It is obviously impossible to determine accurately whether the venereal patient has exposed himself or not, as all information on that point must be given voluntarily. The number of re-infections can perhaps be more accurately stated; but here, again, there is the difficulty of determining the difference between a relapse and a re-infection. Of the 400 cases under review, 21 admitted re-exposure during treatment and more than half of these (11) contracted a fresh infection.

The average attendance of the 400 defaulters may be stated as something like 14 weeks, so that in that period nearly three per cent. of them contracted venereal disease. We might be justified in estimating that in the course of a whole year 10 per cent. of them would become re-infected. This number, however, is probably low as an index of exposure, because those who are being treated for syphilis and many of those who have previously had the disease will, no doubt, be immune. Admittedly, the figure 10 per cent. cannot be applied generally to the total defaulters under the scheme, yet it seems reasonable to believe that the defaulter is more liable to contract, and therefore to transmit, venereal disease than the non-defaulter or the ordinary male adult population as a whole.

Of the 400 persons investigated, 159 admitted having passed through an attack of venereal disease at some former time. That is to say, almost 40 per cent were already seasoned individuals—surely a very high proportion.

From these facts it is obvious that the defaulter is a much less temperate individual, as far as sexual indulgence is concerned, than the rest of the male population. It may be possible to get the most offensive portion of this group of the population circumscribed and identified through time. The policy of secrecy, which is at present such an important factor in the working of the Venereal Diseases scheme, definitely plays into the hands of this group. They do not realise, or, if they do, they do not care in the least about the damage they inflict. Many are considerably below that level of intelligence which would enable them to take precautions calculated to make sexual incontinence safe as far as venereal disease is concerned.

The time has come to consider seriously the partial removal of this cloak of secrecy, and the advisability of the local authority having power to deal with venereal disease in certain cases as with any other infectious disease, by supervision and by isolation, where necessary. Many persons, both male and female, are utterly irresponsible in their conduct regarding venereal disease and its spread, and these the present scheme fails to reach. As time goes on it will be less and less likely that more open methods will drive the disease

underground, as is so greatly feared by many at present. Secrecy favours the habitual offender, but it is by no means certain that the abrogation of secrecy will reduce to any material extent the proportion of venereal disease cases who come to the clinics for treatment.

Many cases admittedly come to the clinics only to be temporarily patched up, and it may well be that, in many instances, the defaulter, or at any rate the early defaulter, is more dangerous than the man who hides his disease altogether,

From another point of view this lack of control over the defaulter, and of patients generally, tends to prevent the authorities from learning accurately the results of treatment, as there can be no adequate follow-up of cases. A very large proportion of the records of the past ten years' work are of little value. Accurate statistics with regard to venereal disease are still far from being available, and reliable knowledge of the life history of these infections is meagre and unsatisfactory.

The duration of attendance of the 400 male defaulters is shown on Table IX.

TABLE IX.

SHOWING DEFAULTERS FROM MALE CENTRES IN RELATION TO APPARENT OR ASSUMED REASON FOR DEFAULT AND DURATION OF ATTENDANCE.

Apparent reason why Patient Defaulted.	Duration of Attendance.							Total.
	- 1 week.	- 1 month.	- 3 months.	- 6 months.	- 12 months.	- 2 years.	+ 2 years.	
1	36	25	46	35	5	12	—	159
2	9	9	49	61	18	10	—	156
3	6	10	9	4	1	1	2	33
4	—	—	3	3	2	—	2	10
5	1	—	1	4	—	—	—	6
6	—	—	—	—	—	3	5	8
7	—	—	—	1	—	1	—	2
8	3	—	1	1	—	—	—	5
9	11	3	2	3	2	—	—	21
Totals, ...	66	47	111	112	28	27	9	400

On the whole, the syphilitic patient attends slightly longer than the others, but not in proportion to the seriousness of the disease, or the length of treatment required for cure. One would like to see syphilis patients under treatment and observation for at least two years, whereas gonorrhœa might be adequately dealt with in less than three months. The default in syphilis is therefore of more serious import than in gonorrhœa. One might compute the average duration of attendance of these defaulters suffering from syphilis at 23 weeks. At least three-quarters of the cases must, by reason of their treatment, have had their infectivity considerably reduced.

There are two main reasons why patients default. The first is "No apparent reason," and although this seems at first sight an Irishism, it is really intelligible. These patients left the clinics without

giving any hint to anyone. They may be ignorant or callous, or they may have gone elsewhere for treatment. 42.3 per cent. fall under this category (159 cases), and of these 22.5 per cent. defaulted within the first week. It should be mentioned that this group has much the same constitution as the whole 400 as regards the type of disease. By analogy from the results of the enquiry into female defaulting it may be assumed that a large proportion of these 159 cases have given wrong addresses and would be untraceable. The second reason, namely that the patient either presumed that he was cured or failed to return after he had been placed on a rest period, accounted for 152 cases, or 38 per cent. Only 13 of these were syphilitic. More than half of them attended for more than three months. Possibly much of the defaulting under this head could be prevented by more careful explanation of the necessity to continue under observation being given at the clinic by the physician and attendants.

It is not possible to say, from the study of the present series of cases, that accidents in treatment, such as the pain from a faulty injection, a collapse after lumbar puncture, or some such untoward occurrence had any material effect in producing default. In only 10 cases was this a possibility. Associated with accidents in treatment one might take the group where default was said to be due to some psychological factor, such as fear of treatment, which only contains five cases. It will be seen that these causes only operate in a relatively small number of cases.

Definitely established instances of treatment being interrupted by intercurrent illness were few and far between—only five in all.

An examination similar to the foregoing was made of 100 male defaulters from the Venereal Diseases Clinic at the Western Infirmary. The sample here proved not to be a very good one, so that the results may not be capable of general application with accuracy. Most of the cases were of late syphilis (72 per cent.). There were hardly any cases of gonorrhœa. The largest group, 34 per cent., ceased attending after prolonged treatment of more than 18 months; 24 per cent. failed to return after a rest period and probably presumed themselves cured; 20 per cent. ceased attending for no ascertainable reason. An accident in treatment may have been the cause of scaring away six per cent., and in four per cent. it was thought that their employment prevented them from continuing at the clinic.

In the female Venereal Diseases Clinic at the Western Infirmary the sample was also a bad one statistically; 50 per cent. of the defaulters were cases of late syphilis; 24 per cent. defaulted for no ascertainable reason; 22 per cent. were understood to be definitely of opinion that they were cured; and 18 per cent. ceased coming to the clinic after a long period of treatment of over 18 months.

In connection with these facts, it should be pointed out that many of these so-called defaulters really had undergone useful courses of treatment, and from the standpoint of preventive medicine would probably not be considered a very grave danger to the community.



Information regarding the defaulters from the female *ad hoc* centre at Baird Street is undoubtedly more complete and reliable than that obtained elsewhere, for the reason that each case was followed up by the nurse-almoner. The size of the clinic permits the doctor to be familiar with the cases individually. Great trouble is taken at this centre to persuade the defaulters to return for treatment. A considerable number of congenital cases are dealt with here, so that special attention was paid to them.

The following is a summary of what was found on examining the particulars of the sample from this clinic:—92 per cent. of the cases were from the city and the remainder from areas outwith; 54 per cent. suffered from syphilis, and 12 per cent. of these had a congenital infection; 64 were married, 31 single, and 5 were widows. It is noted that one of the congenital cases was married.

The extent to which they attended is shown thus:—

-1 week.	-1 month.	-3 months.	-6 months.	-1 year.	-2 years.	+2 years.
6	20	17	12	22	15	8

The average duration of treatment of the cases was 16 weeks, and of the syphilitic cases, the average duration of treatment was practically the same.

In contrast to the male defaulters, only one female was returned as having had a previous venereal infection, and only one had a definite infection while under treatment. It must be remembered, however, that it is more difficult to ascertain such facts as these in the female than in the male.

The defaulters, when classified as to the cause of default, fall principally into the headings of: (1) no apparent reason, (2) presumed themselves cured, and (3) psychological. Eighteen cases came under heading (1), and none of them could be traced at the addresses they had given. Sixteen cases were thoroughly convinced that they were cured of their disease and refused to admit that there was any reason why they should come to the clinic. Of course, these were all cases without symptoms. Amongst those in category (2)—16 cases—only two had less than three months' treatment, while the remainder had all well over six months' attendance to their credit. Under the heading "Psychological" there were 28 cases, composed equally of those who refused point blank to have treatment and those who were merely indifferent. These latter would promise to return to the clinic, but either did not intend to do so or had not the will power to fulfil their promise. Two-thirds of the "psychological group" attended for less than three months.

Six cases found that the exigencies of their employment prevented their attending, and six more fell away because of their household duties; but all of these 12, except three, came to the clinic for more than six months, thereby showing a certain degree of willingness. Five of these 12 were late syphilitic infections. Four cases dropped



off without explanation after prolonged treatment, lasting more than eighteen months.

Only two cases attributed their default to accidents or trouble in the technique of treatment. In two instances the husband refused to allow his wife to attend, and in two the wife refused to come because the husband was infected and would not attend himself, the argument being that if the wife was continually being exposed to re-infection, what was the use of her trying to be cured? Of the congenital cases, 12 in number, eight had more than six months' treatment and two had attended for more than two years. Ten of these defaulted because there was no responsible guardian to see to their continued attendance, or because the guardian had become indifferent. One case was not traced, and the twelfth, after more than six months' treatment refused to attend any longer.

It is somewhat difficult to say, in connection with this clinic, when a patient definitely becomes a defaulter. Many more would be returned as such were it not for the efforts of the nurse-almoner. Patients have a habit of staying away for a period but again returning after a visit at their homes when, on the position being explained to them, they consent to resume treatment. After a further spell they relapse again. This means that in many instances the continuity of treatment is somewhat broken, and yet the patient has not completely severed her connection with the clinic. There is thus a variety of intermediate stages between the complete defaulter and the perfect attender which cannot be expressed in figures.

*Conclusions.*—The conclusions from this enquiry and from facts stated earlier in the report are :—

(1) That great care is necessary in interpreting the figures shown in official returns. The peculiar nature of the diseases and their treatment, together with the many variables to be taken into consideration, and the lack of accurate data render it difficult to evaluate the position in terms of a simple percentage. There are all stages of intermediacy between the complete defaulter and the perfect attender.

(2) The labour of officially controlling all defaulters would be enormous in a city like Glasgow, but there is no reason why some power should not be at the disposal of the local authority to deal with outrageous cases of defaulting and spreading venereal disease, while the disease is definitely in a communicable stage.

(3) Defaulting is much more rife than was hitherto supposed, as shown by considering defaulters in relation to dismissals and new cases; but, on the other hand, the attendances per patient have increased and the standard of cure has been raised.

(4) The object of the scheme is to diminish infection; this is being accomplished to a considerable extent as regards the patients who come to the treatment centres.

(5) It is noted that many patients do not return after having been placed on a "rest period."

(6) The poor mental equipment of many patients renders it impossible to get them to understand the dangers and possibilities connected with venereal disease, especially when symptoms are in abeyance.

(7) With all the difficulties which lie in the way of obtaining information about patients, it is impossible, as yet, to give a definite opinion based upon accurate information, with respect to the later results of treatment, or to utilise fully the experience of the clinics for the advancement of medical knowledge as to the incidence and consequences of these diseases.

## SECTION VII.

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### HOSPITALS AND DISINFECTING STATIONS.

The somewhat lower prevalence of scarlet fever and diphtheria, and the almost entire absence of measles during the winter of 1928-29, greatly relieved the hospital situation and enabled accommodation to be provided for acute pneumonia and influenzal pneumonia, which appeared in the City, accompanying an epidemic of influenza, with heavy mortality, which is referred to in the section on respiratory diseases. The growing tendency to look to the Fever Hospitals to accommodate most of these patients who require hospital treatment has, year after year, placed a considerable demand on the available beds. At the end of 1928 there were less than 500 cases of acute primary pneumonia under treatment in the hospitals, but this number rapidly rose to over 700 during January, and on 4th February as many as 733 beds were so occupied.

This recurring difficulty in admitting all the cases requiring treatment, continually raises the question of additional hospital accommodation, and the matter is now receiving attention. The increasing number of diseases with which the Local Authority is expected to deal is also a factor in the situation. Recently the list of notifiable diseases was added to by the inclusion of puerperal pyrexia.

At the beginning of November, 1929, there was a considerable demand for hospital beds to meet the seasonal increase of scarlet fever and diphtheria, which occurs annually during the autumn; at the same time the biennial prevalence of measles had become general throughout the east and south-east districts of the City, and it was therefore thought advisable to issue a circular to medical practitioners, asking their co-operation with the Department in the utilisation of the available hospital accommodation to the best advantage. This circular was issued on 13th November.

The pressure on available bed accommodation for cases of measles, especially when pneumonia gives indication of being heavier than usual, becomes difficult to meet. Further, when both measles and pneumonia are prevalent at the same time, there is always the serious risk of cross infection of wards, which prevents the full use being made of the accommodation provided. This constant menace is a grave incident when it occurs. Children admitted to pneumonia wards, in whom there is no definite evidence of serious disease, frequently develop signs of measles some days after admission; in other cases the measles rash may be present on admission to the hospital, though the case had been notified and removed as pneumonia.

The occurrence of measles in a ward for the treatment of bronchial pneumonia in young children is a serious incident, and during the winter every effort was made to ascertain definitely whether children

had been exposed to measles before admission by causing visits of enquiry to be made before removal to hospital. In spite of this precaution, many wards became cross infected. Fortunately, it was possible in most of such incidents to use convalescent patient's serum for prophylactic purposes, with good results.

During the latter months of the year it was again necessary to resort to the practice of keeping a waiting list of cases requiring hospital treatment, although this was not so extensive as during the previous winter because of the lower incidence of pneumonia. In view of these difficulties a number of the visiting nursing staff were seconded from their regular duties on tuberculosis, child welfare, &c., for the purpose of keeping these and other home cases under observation, and advising the parents regarding the treatment to be followed and the precautions to be taken.

Altogether there were 14,357 admissions to Local Authority hospitals, while 1,170 were accommodated in other institutions, 828 of the latter being cases of pneumonia. The numbers of the various diseases admitted are given in Table XVII. in the Appendix.

*Belvidere Hospital.*—The construction of the observation ward, described in the report of last year, has been begun, and it is hoped that it will be available before next winter. It will be of considerable value in reducing to a minimum the cross-infection of wards at times when the demand on hospital accommodation is at its highest.

*Shieldhall Hospital.*—This is an old hospital, with considerable structural defects, and, were it not for the need of retaining all the available hospital accommodation, its use might have been discontinued. In view of the present stringency, however, considerable repairs have been undertaken in order that the accommodation may be retained for a number of years, but it has been found necessary to discontinue the bed accommodation in one of the seven pavilions, a wooden erection, which is entirely unsuitable for patients, and the total bed accommodation has thus been reduced by 20 adult beds to 100 beds. Some temporary alterations, however, have been effected in this pavilion in order to provide additional store and staff accommodation.

*Knightswood Hospital.*—This hospital was also taken over at the same time as Shieldhall with the extension of the boundaries of the City in 1912. During the past few years it has been entirely rebuilt with the exception of the administrative block, and during 1929 two remaining new wards became available for occupation. One is a ward of 20 beds, and the other, a cubicle observation ward, accommodating in all 16 adult beds. The total accommodation at Knightswood Hospital is now 258 beds.

*Bellefield Sanatorium.*—This institution, when transferred to the Corporation at the end of 1914, consisted of an old mansion house,

two wooden pavilions with accommodation for 46 patients, and three chalets accommodating six patients, in all 52 patients. During the past three years the wooden wards have been replaced by modern pavilions, and the chalets discontinued. The total accommodation now available for patients is 102 beds. The increased staff are accommodated in the administrative block, which has been reconstructed.

The hospital bed accommodation for infectious diseases is shown in Table XX. in the Appendix, the second portion of which indicates the number of beds available in Corporation institutions and sanatoria, and the number of beds occupied by tuberculosis patients in other hospitals and sanatoria for which payment is made.

Owing to the early publication of the Annual Report this year, the usual information with regard to expenditure in Table XXI. is for the financial year ending 31st May, 1929.

## ANNUAL REPORTS OF THE HOSPITALS.

The Annual Reports submitted by the Physician-Superintendents of the hospitals and sanatoria form Part II. of this report. In each case tables are appended, giving information as to the numbers admitted and dismissed, &c.

## EAR, THROAT, AND NOSE DISEASES.

The following statement summarises the visits made to hospitals by the two specialists. Further details will be found in the various hospital reports:—

### RECORD OF ATTENDANCES AND OPERATIONS BY AURISTS AT CORPORATION HOSPITALS FOR THE YEAR 1929.

	Patients.						Staff.		
	New Cases.		Old Cases.		Operations.		New Cases.	Old Cases.	Operations.
	Age - 5	+ 5	- 5	+ 5	- 5	+ 5			
Belvidere, ...	43	64	57	90	9	12	4	—	2
Shieldhall, ...	22	18	19	14	18	12	1	2	—
Robroyston, ...	2	15	—	—	3	12	4	—	1
Ruchill, ...	92	149	40	88	42	71	10	8	3
Knightswood, ...	9	23	—	4	20	11	1	—	—
Total, ...	168	269	116	196	92	118	20	10	6
Year 1928,	215	301	148	219	107	152	33	21	15

## RECEPTION HOUSES.

The accommodation at Baird Street Reception House was utilised wholly during the year for the treatment of cases of ophthalmia neonatorum and artificial light therapy of tuberculosis. The former is dealt with in Section III. of the report, and the latter under "Tuberculosis."



The rear annexe of South York Street Reception House continued to be utilised for the isolation of young children prior to admission to the various country homes. Cases of scabies to the number of 57 and 46 verminous persons were also treated.

CONTACTS, &C., ADMITTED TO SOUTH YORK STREET RECEPTION HOUSE.

	1928	1929		
	Total.	Adults.	Children.	Total.
Smallpox Contacts, ... ..	2	55	14	69
Enteric Fever „ ... ..	—	—	3	3
Scarlet „ „ ... ..	1	—	1	1
Diphtheria Contacts, ... ..	3	—	1	1
Whooping - cough Contacts 1, Measles Contacts 2, Erysipelas Contacts 1, Puerperal Fever Contacts 1, Chickenpox Contacts 3, Pulmonary Tuberculosis 1, Streptococcal Carrier 1, Dermatitis, Eczema, Vaccinia, and Erythema 2 ... ..	12	—	—	—
Dysentery Contacts, ... ..	—	1	3	4
Enteric and Measles Contacts, ... ..	—	—	2	2
Impetigo, ... ..	36	9	5	14
Verminous Persons, ... ..	46	30	16	46
Scabies, ... ..	82	21	36	57
For Observation before admission to Country Homes, ... ..	202	—	122	122
Trachoma, ... ..	—	—	2	2
Cancrum Oris? ... ..	—	—	1	1
House being fumigated, ... ..	—	2	6	8
Total, ... ..	384	118	212	330

DISINFECTING STATIONS.

The following tables summarise the washings and disinfections carried out at Ruchill and Belvidere Disinfecting Stations during the year 1929:—

	Belvidere.	Ruchill.	Total.
Number of washings, ... ..	8,025	6,568	14,593
Average number per day, ... ..	26.4	21.2	47.6
Articles washed and disinfected, ... ..	310,921	279,755	590,676
Average number of articles per washing, ... ..	38.7	42.6	40.5
Fuel consumed, ... ..	... tons 631	626	1,257
Fuel used per article, ... ..	... lbs. 4.55	5.01	4.77
Soap and powder used per article, ... ..	... ozs. .33	.29	.31
Disinfectant „ „ ... ..	... ozs. .41	.54	.47

NUMBER OF WASHINGS, ARTICLES DISINFECTED, &c., FOR YEARS  
1921-29 INCLUSIVE.

			Washings.	Articles.	Sprayings.	Whitewashings.
1921,	...	...	18,060	655,867	19,196	21
1922,	...	...	14,837	533,450	9,418	21
1923,	...	...	14,423	526,285	8,008	2
1924,	...	...	14,690	510,275	8,405	3
1925,	...	...	14,408	530,777	8,473	2
1926,	...	...	15,992	620,038	9,806	—
1927,	...	...	16,323	648,516	10,495	2
1928,	...	...	15,135	584,257	9,219	—
1929,	...	...	14,593	590,676	10,076	27*

Books Disinfected, 1,207.

\* Includes 13 Limewashing of Ash-bin shelters in connection with an outbreak of dysentery.

*Fumigation of Vessels.*—Most of the fumigations of vessels for disinfection of rats are done by this department. Information regarding this matter is given in the report of the work of the Port Local Authority, which forms Section IX.

*Disinfection of Second-hand Clothing, &c.*—Disinfection of second-hand clothing for export to Ireland, as required by the regulations issued by the Irish Free State, continued through the year. In all, 2,092 consignments were disinfected and certificates issued, the total amount received in respect of charges being £471 19s. 6d.

*Disinfection of Straw Coverings.*—In order to comply with the regulations of various countries, the arrangements for the disinfection and certification of straw coverings were continued during the year. No additional names have been added to the list of those providing suitable chambers for this purpose, and the former arrangement whereby the Department is notified when a supply of packing is to be disinfected continues. Odd lots required by firms whose volume of business is small are dealt with at the Local Authority Disinfecting Stations. During 1929 certificates numbering 140 were issued.

*Export of Spirits.*—In connection with the export of whisky, &c., to one of the South American countries, regulations were put in force regarding the quality, &c., of such spirits, and for a time certificates were issued to local exporting firms. Owing to the nature of the declaration in the certificates the matter was reported to the Department of Health for Scotland, who later advised that the Government concerned would be prepared to accept a declaration issued by the manufacturer of the goods if the declaration was countersigned by a Chamber of Commerce and legalised by the Consul.

## SECTION VIII

## OFFENSIVE TRADES.

The number of offensive businesses in the City on the register at 31st December, 1928, was 70, which is one less than the number so registered at the end of the previous year.

The following shows the nature of these businesses:—

	1929	1928
Bone Boilers, ... ..	8	8
Tallow Melters, ... ..	21	20
Manure Manufacturers, ... ..	8	8
Gut Cleaners, ... ..	3	3
Hide and Skin Factors, ... ..	8	8
Soap Boilers, ... ..	10	10
Tanners, ... ..	7	8
Glue and Size Manufacturers, ... ..	3	3
Horse Slaughterer, ... ..	1	1
Knacker, ... ..	1	1
Tripe Cleaner, ... ..	—	1
	<u>70</u>	<u>71</u>

During 1929 several applications were made for registration or renewal of registration of premises for carrying on offensive trades.

*Horse Slaughterers or Knackers.*—The annual statutory renewal of licences for the carrying on of the businesses of slaughterers of horses and knackers were again granted in respect of two establishments in the northern district of the City.

*Soap Boiler.*—An application was made for the transfer of a soap-boiler's business in the south-eastern to premises in the northern district of the City. There are no dwelling-houses in proximity to the premises, which consist of a single-storey building, approximately 55 feet square, lit by roof-lights.

In the process employed only pure refined tallow, cocoa-nut oil and rosin are used. The fat is melted in a small iron pan, which contains an open steam coil, the steam being supplied from a low-pressure vertical boiler. Liquid caustic soda is added to the melted fat, and very little evaporation of steam takes place. When finished the soap is run into barrels. The whole process as conducted gives rise to very little odour.

Sanction to establish the business was withheld by the Corporation, but an appeal against this decision was upheld by the Department of Health, on the understanding that the appellants gave a written

undertaking (1) to make no change in the process used in the old premises, (2) to improve the surface drainage, (3) to provide better ventilation, and (4) to cleanse and limewash the walls. Sanction to establish the business was granted by the Corporation on the applicant undertaking to comply with these conditions.

During April an application was received to establish the business of tallow-melters in the northern district of the City. The premises are situated in an area mainly occupied by business premises. There are only four dwelling-houses within a radius of 100 yards. On inspection, the building was found to be in a somewhat dilapidated condition, but a Dean of Guild lining for its reconstruction was granted to the applicant.

The business consists wholly in the manufacture of edible fats from fresh tallow, the latter being melted in a pan similar to an ordinary wash-house boiler with fireplace underneath, connected to a suitable flue. The licence was granted on condition (1) that no tallow, other than fresh tallow for the manufacture of edible fats, should be melted within the premises, (2) that the business should not be commenced until the premises were reconstructed to the satisfaction of the Master of Works.

## SECTION IX.

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### PORT LOCAL AUTHORITY.

The boarding of vessels at Greenock by means of a motor launch, hired on a yearly contract, was continued during 1929.

The constitution of the Port Local Authority is laid down in the Order of the Local Government Board for Scotland, constituting the Local Authority of the Burgh of Glasgow, in terms of the Public Health (Scotland) Act, 1897, the Port Local Authority of the Port of Glasgow. Article III. is as follows:—

“The jurisdiction of the said Port Local Authority shall, subject to the exceptions hereinafter in this article mentioned, extend to the whole of the said Port of Glasgow as defined by the Treasury Warrant, dated 19th April, 1859, and to the place or places for the time being appointed as the Customs’ Boarding Station or Stations for the said port, and the place for the time being appointed for the mooring or anchoring of ships for the said port under any regulation for the prevention of the spread of diseases under Part 4 of the Public Health (Scotland) Act, 1897, and to all waters, harbours, and strands belonging to the said port, &c.”

The duties of a Port Local Authority are laid down in the Public Health (Scotland) Act, 1897, and in the Public Health Port Administration (Infectious Diseases) Regulations (Scotland), 1921, made by the Scottish Board of Health.

The Port staff now consists of a Boarding Medical Officer and a Supervising Inspector, five Sanitary Inspectors for food inspection, infectious diseases, and nuisances, three Inspectors at Greenock Boarding Station, and four Rat Catchers and Searchers.

*Summary of Work during the Year 1929.*—One thousand six hundred and fifty-one vessels passed the boarding station bound for the Port of Glasgow. Of these, 547 had come from or called at infected ports; 265 direct or with foreign inward cargo on board, and 282 light or with outward cargo on board.

There were also 645 vessels from the Irish Free State. The total tonnage of the 1651 vessels from foreign was 4,929,467 tons, as compared with 1,596 and 4,565,519 during the year 1928.



NUMBER OF SHIPS ARRIVING FROM FOREIGN AND IRISH FREE STATE PORTS DURING THE YEAR 1929.

Month.	FROM INFECTED PORTS.										FROM NON-INFECTED PORTS with or without Cargo.						Total from Foreign Ports.			From Irish Free State Ports. Ships.
	Class A direct, or with Foreign Inward Cargo.			Class B Light or with Outward Cargo.			Total of A and B.				From Non-Infected Ports with or without Cargo.			Total from Foreign Ports.						
	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.					
January,	...	19	1,159	—	31	2,007	—	50	3,166	—	85	3,363	332	135	6,529	332	44			
February,	...	11	824	—	16	926	—	27	1,750	—	77	3,437	262	104	5,187	262	43			
March,...	...	28	1,902	—	29	1,545	—	57	3,447	—	87	3,448	282	144	6,895	282	60			
April, ...	...	20	1,538	4	21	1,487	98	41	3,025	102	98	6,440	886	139	9,465	988	41			
May, ...	...	16	1,449	2	18	913	—	34	2,362	2	94	4,996	1,282	128	7,358	1,284	57			
June, ...	...	25	1,582	10	26	1,584	—	51	3,166	10	91	5,449	2,746	142	8,615	2,756	52			
July, ...	...	22	1,597	—	22	1,280	108	44	2,877	108	88	5,787	4,793	132	8,664	4,901	57			
August,	...	19	1,779	179	30	1,773	101	49	3,552	280	102	5,561	1,656	151	9,113	1,936	59			
September,	...	26	2,034	—	24	1,413	—	50	3,447	—	96	7,137	1,618	146	10,584	1,618	58			
October,	...	25	1,666	—	19	964	—	44	2,630	—	104	5,780	1,289	148	8,410	1,289	67			
November,	...	24	1,599	—	23	1,464	—	47	3,063	—	99	5,426	809	146	8,489	809	60			
December,	...	30	2,111	—	23	1,814	—	53	3,925	—	83	4,511	1,204	136	8,436	1,204	47			
Totals,	...	265	19,240	195	282	17,170	307	547	36,410	502	1,104	61,335	17,159	1,651	97,745	17,661	645			
1928,	...	271	19,453	11	269	17,001	368	540	36,454	379	1,056	52,985	18,019	1,596	89,439	18,398	653			

The following table shows the number and nationality of overseas vessels with their crews arriving at the Port of Glasgow during the year 1929, as compared with 1928.

Nationality.	Number of Vessels.		Number of Crews.	
	1928	1929	1928	1929
American, ...	79	73	3,019	2,801
British, ...	1,286	1,355	80,460	89,043
Belgian, ...	1	1	13	52
Danish, ...	7	8	124	138
Dutch, ...	12	19	245	405
Finnish, ...	13	12	285	255
French, ...	4	5	126	102
German, ...	16	9	322	245
Greek, ...	4	6	108	148
Italian, ...	6	3	169	78
Japanese, ...	13	14	925	895
Jugo-Slav, ...	16	11	509	360
Latvian, ...	1	2	20	34
Norwegian, ...	67	56	1,300	1,104
Portuguese, ...	1	—	24	—
Panamanian, ...	1	—	26	—
Roumanian, ...	—	1	—	34
Russian, ...	3	3	103	112
Spanish, ...	53	55	1,411	1,594
Swedish, ...	13	18	250	345
Totals, ...	1,596	1,651	89,439	97,745

### INFECTIOUS DISEASES.

The following table shows the number and nature of the cases of disease noted during the year 1929. The first column gives the total number of cases. Column 2 shows that 136 were found on arrival of the ship at Glasgow. Column 3 refers to 182 cases dealt with at other ports during the voyage. Particulars of these are not always available, but where necessary disinfection was carried out on the arrival of the ship at Glasgow. The other columns show how the 136 cases found on arrival were dealt with; 51 cases were removed to hospital in Glasgow and 85 cases were permitted to go home. Thirty-nine deaths were recorded during the year.

TABLE SHOWING DISEASE AND NUMBER OF CASES DURING  
THE YEAR 1929.

Disease.	Total Number of Cases.	Cases found on Arrival.	Cases dealt with in other Ports.	Cases sent to Hospital in Glasgow.	Cases sent Home.	Deaths.
Cholera, ...	1	—	1	—	—	—
Plague, ...	—	—	—	—	—	—
Yellow Fever, ...	1	—	1	—	—	1
Smallpox, ...	9	—	9	—	—	1
Enteric Fever, ...	12	2	10	2	—	1
Scarlet Fever, ...	13	2	11	2	—	1
Diphtheria, ...	5	5	—	5	—	—
Measles, ...	21	4	17	1	3	—
Whooping-cough, ...	3	1	2	—	1	—
Chickenpox, ...	27	13	14	10	3	—
Phthisis, ...	24	12	12	2	10	4
Venereal, ...	30	17	13	—	17	—
Pneumonia, ...	18	6	12	5	1	2
Erysipelas, ...	3	2	1	2	—	—
Dysentery, ...	3	2	1	—	2	—
Malaria, ...	28	18	10	7	11	1
Influenza, ...	10	9	1	2	7	—
Impetigo, ...	—	—	—	—	—	—
Scabies, ...	—	—	—	—	—	—
Mumps, ...	4	1	3	1	—	—
Dengue Fever, ...	1	1	—	—	1	—
Tonsilitis, ...	9	7	2	1	6	—
Trachoma, ...	2	2	—	2	—	—
Continued Fever, Non-pulmonary	1	—	1	—	—	—
Tuberculosis, ...	5	3	2	2	1	—
Accidents, ...	1	—	1	—	—	—
Simple Bubo, ...	2	2	—	2	—	—
Other illnesses, ...	85	27	58	5	22	28
Totals, ...	318	136	182	51	85	39
1928, ...	348	191	157	78	113	16

During the year 1929, 225 merchant servicemen attended the clinic at Broomielaw.

*Smallpox.*—The following report deals with the circumstances attending the introduction of smallpox from India by the S.S. *Tuscania*. Between 5th and 22nd April 15 cases of smallpox were removed to hospital in Glasgow, subsequent to the arrival of the vessel on 4th April, 13 being members of the crew, one a passenger, and one a relative of a steward, who conveyed the infection presumably by means of his clothing. All were directly due to infection received on or, in one case, transmitted from the ship. Contemporaneously with this

occurrence, others of the ship's complement, both passengers and crew, took ill shortly after reaching their destinations in various parts of the country and abroad.

*Movements and Personnel of the Vessel.*—The ship arrived at Bombay on 4th March, and left on 14th March, the ports of call on the homeward journey being as follows:—Port Said and Suez, 22nd March; Marseilles, 27th March; Gibraltar, 29th March; Liverpool, 1st April; and Glasgow on the evening of 4th April. She left Bombay with a total complement of 1,117 passengers and an all-British crew of 437 members, taking on 19 passengers at Port Said, eight at Marseilles, and nine at Gibraltar. There disembarked 21 passengers at Suez, 14 at Port Said, 457 at Marseilles, 10 at Gibraltar, and 651 at Liverpool. Of the crew, one was removed to hospital at Marseilles and three at Liverpool, and 176 were paid off at Liverpool. The vessel arrived at Glasgow with 259 members of the crew, including two who had been paid off at Liverpool but came round to Glasgow on the ship. A supply of lymph, sufficient to vaccinate, if need be, the whole personnel of the ship, had been taken on board before leaving this country. Notices offering revaccination were posted up on the vessel at Bombay, but without effect.

*Incidence of Smallpox on the Vessel.*—On 3rd April a message was received from the Port Medical Officer at Liverpool that the ship had had smallpox on board, that a case had been landed at Liverpool, and that the date of onset was 18th March. This was followed by a list of the crew and passengers proceeding to Glasgow, either on ship-board or by rail. On arrival at the boarding station at Greenock, it was ascertained by the Port Boarding Medical Officer that a case of smallpox had been removed at Marseilles under the following circumstances, as reported by the ship's surgeon. The patient, a seaman, had taken ill on 17th March, and had been removed to the ship's hospital on the following day, where he remained until taken to hospital at Marseilles. His symptoms were headache, fever, and a severe tonsillitis, followed on 20th March by an erythematous rash, developing next day into what appeared to be a marked general dermatitis, going on to the formation of large blisters on various parts of the body with considerable prostration. The patient was given antidiphtheritic serum, and the condition did not suggest smallpox. The ship's surgeon pointed out that he was fortified in this diagnosis by the opinion of the boarding medical officers at Port Said, Suez, and Marseilles, and by two other medical men on board. It was only after the ship had disembarked its passengers and had left Marseilles that the diagnosis of smallpox was communicated to the ship by a wireless message. Re-vaccination of the ship's personnel was then commenced and completed by 1st April, when the ship reached Liverpool.

This patient was treated throughout in the ship's general hospital, and even although he was ultimately recognised to be suffering from

smallpox it seems most unlikely that this source could have been responsible for the widespread infection of the passengers and crew, which apparently took place about this time. His immediate contacts, a passenger and a member of the crew, both of whom were under treatment in the hospital along with the hospital attendant, were removed at Liverpool for observation, and none of them developed the disease.

The second case on board ship, a greaser who was removed at Liverpool, took ill on 18th March, and was treated throughout in the isolation hospital as a case of chickenpox. The ship's surgeon states that this man was also seen by the boarding officers at Port Said, Suez, and Marseilles, but no other diagnosis was made.

*Procedure at Glasgow.*—On arrival at Glasgow on 4th April a general inspection of the crew and the remaining passengers revealed no case of smallpox on board, and arrangements were made to maintain strict daily supervision over the passengers and members of the crew, whether remaining on the ship or proceeding to their homes. This procedure is in accordance with general practice and with Article 42 of the International Sanitary Convention, 1926. At the same time, appropriate arrangements were made for disinfection of the ship's hospitals. This was the position when the vessel arrived, and on the basis of the facts as ascertained, there was no reason to anticipate the events which followed, especially as the two smallpox patients on board, although undiagnosed, had been isolated in the ship's hospitals, and were most unlikely to have caused a widespread general infection of the personnel of the ship. Even had there existed power to place a vessel in quarantine, it is extremely doubtful whether the facts disclosed on the arrival of the ship would have justified so serious a measure of precaution.

As regards notification of the destination of contacts for the purpose of surveillance to the local authorities concerned, it appeared that this had been carried out at Liverpool in so far as related to those passengers and crew who had disembarked there. There was, however, no indication that passengers who left the ship at Marseilles, and proceeded overland to various parts of this country and abroad had been similarly reported. It was, indeed, ascertained that among this group were several passengers proceeding to Glasgow, in respect of whom no notification of contact had been received. Accordingly, a list of the names and addresses of the 457 passengers *via* Marseilles was obtained from the shipping company and notified to the appropriate authorities in various parts of this country and the Continent. These passengers had disembarked on 27th March, and by the time the lists had been obtained and the names and addresses forwarded to the proper quarter, the information would arrive just about the time when contacts might be expected to sicken of smallpox. Had the voyage been still further prolonged the delay would have been still greater. As it was, this measure was late enough,



especially as many of the passengers were moving about on holiday. This raises a very important point as to the procedure for effecting adequate surveillance of contacts disembarking from a ship on which smallpox has occurred. It should clearly have been the duty of some person or authority to perform this function as soon as the first case landed at Marseilles was definitely diagnosed. It was not undertaken till the port of final destination had been reached. As soon as it was apparent that smallpox was occurring among the ship's complement an effort was made, without success, to obtain the names and destinations of the ten passengers who disembarked at Gibraltar.

*Incidence of Smallpox among the Contacts.*—On April 5th, the day after the arrival of the ship, the first case of smallpox declared itself in a bedroom waiter, who was removed on suspicion and definitely diagnosed next day to be suffering from smallpox with a sparse eruption. On 6th April three other cases were discovered in a linen-keeper (who had been isolated on the previous day in the Reception House for observation), an engineer, and a first-class steward. There then followed, during subsequent days, a series of further cases among the crew, making a total of 13.

On the ship's arrival, and for one or two days later, a number of the crew were affected with catarrhal conditions resembling a very mild influenza, no doubt due to their return from the tropics to a cold climate. Owing to the difficulty of separating these from possible early cases of smallpox, a number were admitted to the Reception House for observation. Two of this group were found to be developing smallpox. This complication was, however, evanescent, and as a routine procedure during the subsequent period of observation any contact showing indisposition, however mild, was removed to the Reception House. For these purposes 27 members of the crew were thus dealt with, of whom six actually developed smallpox. The immediate contacts of the cases who took ill at home were also accommodated in the Reception House. The 13 members of the crew admitted to hospital with smallpox were as under:—

Case.	Rating.	Sickened.	Rash.	Isolated.	Remarks.
J. S.	Waiter, ...	1st April	5th April	5th April	Sparse eruption.
E. B.	Linen Keeper	3rd "	6th "	5th "	Abundant semi-confluent.
A. M.	Engineer ...	4th "	6th "	6th "	Abundant semi-confluent.
D. M.	Waiter ...	—	6th "	8th "	Scanty eruption. No history of sickening.
J. F.	Engineer ...	5th "	7th "	7th "	Severe confluent eruption.
R. M.	Waiter ...	5th "	7th "	7th "	Scanty eruption.
J. M.	Steward ...	5th "	7th "	6th "	Scanty eruption.
P. M.	Waiter ...	7th "	9th "	9th "	Abundant eruption.
A. C.	Trimmer ...	—	11th "	11th "	Abundant eruption. No history of sickening.
J. M.	Waiter ...	—	8th "	11th "	Sparse eruption.
J. P.	Trimmer ...	7th "	9th "	8th "	Sparse eruption.
M. M.	Seaman ...	8th "	11th "	10th "	Sparse eruption.
J. C.	Steward ...	—	12th "	14th "	Very sparse eruption. No history of sickening.

To this list there falls to be added three other patients, two of whom were directly related to infection on or from the ship, and a third whose origin has not been satisfactorily explained.

(1) A passenger who had left the ship at Liverpool, and, after spending a few days in London, had proceeded to Glasgow on a visit, was detected with a discrete smallpox eruption by a medical practitioner whom he had consulted shortly after arrival on 9th April. This man had travelled from the south by motor car to a town near Glasgow, and, after being shaved in a local barber's shop in Uddingston, had traversed the City in several tramcars and buses, with a fully developed eruption. The itinerary followed during this journey was ascertained in detail and published in the newspapers, with a recommendation that any person who might have travelled on these vehicles at the times specified should take the precaution of being vaccinated. The date of appearance of this man's eruption was approximately 8th April.

(2) There occurred also an indirect case of infection in the person of a sister of a steward who had proceeded to his home in Glasgow on 4th April, taking with him his kit, which was sorted out and washed a day or two later by the patient, who took ill on 18th April, the rash developing on 20th April. This man, who remained well under close observation and who presented no evidence of a recent infection, had, however, been in close contact with one of the cases on board ship. He had developed an abscess on an arm, which was lanced by the surgeon, and, being off duty, had been detailed one night to look after the ship's hospital, and had personally attended to the patient who was removed at Marseilles on 27th March. His sister was infected within a day or two of his arrival home, the contagion being conveyed probably through the medium of his clothing or the dressings of his wound, a quite likely explanation.

(3) The third case, a boy of thirteen, unvaccinated, took ill on 10th April, and was admitted to one of the fever hospitals as acute pneumonia on 12th April, developing a smallpox rash on the evening of the same day. His father, a dock labourer, had worked at the dock shed in connection with another ship during the time of arrival of the *Tuscania* alongside, but had no connection with this vessel or its contents. Any association of this kind must be regarded as much too slender, as it would, in any case, presuppose an incubation period of five days. On the other hand, the boy's father gave a history of having been ill a month previously, a few spots appearing on his face, the sole remaining evidence of which was some half-dozen faint pinkish marks on his forehead. This illness may or may not have been a very mild attack of smallpox. If so, the source of his infection is quite unknown.

*Source of the Infection.*—The list given above shows the dates of approximate sickening and the dates when the rash appeared. Taking the latter dates, the cases developed as follows:—5th April, one

case; 6th, three cases; 7th, three cases; 8th, two cases; 9th, two cases; 11th, two cases; 12th, one case. Reckoning back fourteen days from these dates, it may be inferred that there existed a source or sources of infection operating continuously on board ship between the 22nd and 29th of March as an approximate period. Further, the widespread character of the subsequent outbreak among passengers and crew alike points to equally widespread opportunities afforded for contracting infection. According to a statement issued on 25th April by the Ministry of Health, 45 persons from the *Tuscania* had been notified as smallpox from various parts of the country. A clear picture of the incidence of the outbreak awaits further detailed information, but it would appear that the great majority of those who contracted infection on board were passengers, waiters, and stewards. The evidence points strongly to the presence among one or other of these groups of a "missed" case or cases in an infective condition between the dates mentioned above. The possibility of this was recognised as soon as cases began to occur, but a careful examination of passengers and crew who had arrived in Glasgow failed to reveal the presence of any such recent infection. As there is no indication that the source of infection persisted after the ship left Marseilles, it may be surmised that the "missed" case or cases, unreported and unrecognised, had occurred among the passengers who landed at that port.

Re-vaccination of the ship's complement took place between 29th March and 1st April, all but three persons submitting. Those who disembarked at Marseilles were not re-vaccinated. As regards the cases which ultimately developed smallpox in Glasgow, it is apparent from the dates of this re-vaccination and those of sickening, that these patients must have received their infection several days prior to the date of the adoption of this precaution. This procedure, though promptly undertaken, was, unavoidably under the circumstances, too late to prevent the damage that had been done.

As cases of smallpox began to develop in Glasgow and elsewhere it became apparent that the likelihood of a freely circulating source or sources of infection, having been present on board, had to be taken into account, and it was considered advisable not only to disinfect thoroughly the whole ship, particularly the sleeping quarters, but to remove for disinfection all the ship's linen, &c., amounting to 35,000 articles. The living quarters of the ship were finally cleaned out and repainted by the owners.

The introduction of smallpox into this country by sea in such volume and with such wide distribution is, fortunately, unique in epidemiological experience. It frequently happens that a ship arrives at a home port from the East, having deposited a case or cases of smallpox at an intermediate port or with a case or two on board. In many instances re-vaccination of the ship's complement has already taken place on the occurrence of the first case. Removal of the sick, medical examination of the personnel, and re-vaccination, followed

by surveillance for the prescribed period, has been the routine procedure followed. Within the past few years no instance has occurred of smallpox developing among contacts travelling to Glasgow by infected ships. The problem of administration set by the *Tuscania*, however, involving the strict supervision of so many contacts and the prompt detection of the first signs of the disease, gave rise to considerable difficulty and anxiety. From the ostensible medical data of the ship's voyage, so great an aftermath of infection could not have been anticipated. It was impossible to reckon with the accident of the "missed" case and its inevitable sequel.

An unfortunate incident of this kind, even if most unusual, is an indication of the possibilities which may arise on shipboard during transport from a country heavily infected with smallpox. The lesson of the episode is not so much a question of the imposition of strict measures of quarantine, as of ensuring that passengers from, and crews of ships proceeding to, infected countries should be protected by recent re-vaccination.

*Disinfection of Ship—9th to 17th April—*

Articles washed, ... ..	30,487
„ steamed, ... ..	1,675
„ fumed, ... ..	2,935
Books destroyed (volumes), ... ..	966
Flour and Meal Bags destroyed, ... ..	187
Milk Cans steamed, ... ..	63
Number of Rooms (with contents) sprayed,	554
Rooms fumigated (special), ... ..	20

Holds and Crew's Quarters fumigated with  
SO<sub>2</sub>, ... .. 455,244 cubic feet.

In addition all Crew's Quarters, Hospitals, and Infected Rooms were repainted, as well as fumigated and sprayed.

Amount of Crude Disinfectant (Septol) used,	10 gallons.
„ „ Formalin Tablets used, ... ..	3 lbs.
„ „ Methylated Spirit used, ... ..	13½ pints.
„ „ Sulphur used, ... ..	12½ cwts.
Rubbish burned, ... ..	3 loads.

ALIENS ORDER, 1920.

All aliens intending to remain in this country for a period of three months or more are subject to medical examination. During the year 1929, 907 such persons were examined.

During the year 84 ships carrying alien passengers entered the Port of Glasgow, an increase of 14 compared with the arrivals for 1928. Of the 84 ships 46 were from the U.S.A. ports, 31 from Canadian ports, six from European ports and one from a cruise.



There were six aliens rejected as a result of medical examination, but were granted conditional landing. The rejections were for the following:—Blindness 1, Hemiplegia 1, L.C.D. 1, Mentally Deficient 1, Measles 1, Pneumonia 1.

#### RETURN OF ALIEN PASSENGERS ARRIVING IN GLASGOW DURING 1929.

Nationality.				Non-Transmigrants.	Transmigrants.	Total.
Americans, ...	...	...	...	4,584	2	4,586
Europeans, ...	...	...	...	33	39	72
Asiatic, ...	...	...	...	6	—	6
Totals, ...	...	...	...	4,623	41	4,664
Do. 1928, ...	...	...	...	5,281	33	5,314

#### EMIGRANTS.

During 1929 162 ships carrying emigrants left the Clyde, a decrease of eight as compared with 1928. Of these 44 sailed for America, an increase of one, and 118 sailed for Canada, a decrease of nine compared with the previous year. Passenger ships sailing from the Clyde for Australia and New Zealand embark passengers at Liverpool.

The following is a return of emigrants and ships which left Glasgow during 1929.

Country.	Ships.	British Subjects.	Other Nationalities.	Total.
America, ...	44	15,906	4,801	20,707
Canada, ...	118	28,286	1,969	30,255
Totals, ...	162	44,192	6,770	50,962
Do. 1928, 170		35,686	3,546	39,232

#### RAT DESTRUCTION.

Article 28 of the International Sanitary Convention of 1926 has imposed additional duties on Port Sanitary Authorities throughout Great Britain, and, in order to carry out these duties in Glasgow, three men, in addition to one already on the staff, were appointed in November, 1928, to carry out the work entailed by Article 28, under the supervision of an assistant inspector.

An endeavour has been made to arrive at a procedure which would be uniform with the practice at other British ports with regard to the granting of Deratisation or Exemption Certificates, in view of the difficulty of fixing standards of rat infestation on shipboard.



## PROVISIONAL STANDARDS FOR FUMIGATION OF SHIPS.

Following a conference at the Ministry of Health with Medical Officers of Health of approved ports, the following provisional standards have been suggested for the fumigation of empty ships:—

1. *Sulphur Dioxide*—

(a) If the gas is generated by burning sulphur, 3 lbs. of sulphur per 1,000 cubic feet of space. Minimum time of exposure: 6 hours.

Only sulphur of good quality must be used, and not more must be placed in any receptacle than will be completely burnt out in the time prescribed.

(b) If liquified sulphur dioxide (Sulphume) is used in place of sulphur dioxide generated by burning, 2 lbs. of the liquified gas are required for each lb. of sulphur employed by burning. Minimum time of exposure: 6 hours.

2. *Hydrogen Cyanide*—

(a) If the gas is generated by the vaporisation of liquid hydrogen cyanide:—For Holds, Provision Store-rooms, and other Rat-infested Compartments, 2 ozs. per 1,000 cubic feet. For Living Quarters and Super-structures, and other spaces not used for stores or cargo, 1 oz. per 1,000 cubic feet. Minimum time of exposure: 2 hours.

(b) If the gas is generated by the exposure of Zyklon B:—For Holds, Provision Store-rooms, and other Rat-infested Compartments, 2 ozs. of the HCN net content of each container per 1,000 cubic feet. For Living Quarters and Super-structures and other spaces not used for stores or cargo, the amount may be reduced to 1 oz. per 1,000 cubic feet. Minimum time of exposure: 2 hours.

*Note.*—Zyklon B is packed in containers and HCN net content in ounces and grams, is printed on the label of each container, and these figures may be used as the basis of dosage. (The gross actual weight of each container is of no importance.) *Parts of containers must not be used*, and suitable multiples of different size containers to the next nearest higher total amount should be employed.

(c) If the gas is generated by the old-fashioned dumping method, for each 1,000 cubic feet of space 5 ozs. of Sodium Cyanide (or the equivalent amount of Potassium Cyanide). Minimum time of exposure: 2 hours.

One hundred and thirty-five vessels were deratised in accordance with the instructions issued by the Department of Health for Scotland. Of these, 113 were from infected ports and 22 from non-infected ports. In 90 instances certificates of exemption from fumigation were granted, where the vessel was new or had been deratised within six months, and 39 existing certificates were endorsed. Thirty-nine vessels were loaded at a distance of eight feet from the wharf, rat guards affixed, and all other methods adopted to prevent the migration of rats.

After a vessel is fumigated a thorough search is made for rats, and the following table summarises the results of fumigations, trap-pings, &c., during the year:—

	Number of Ships Deratised.				Number of Rats Recovered.
	By SO <sub>2</sub> .	By HCN.	By Zyklon B.	By Trap- ping.	
From Infected Ports, ...	103	—	2	8	1,760
From Non-Infected Ports,	15	1	6	—	387
	118	1	8	8	2,147

#### RATS CAUGHT BY TRAPPING.

					Number.
From Infected Ports, ...	...	...	...	...	925
From Non-Infected Ports, ...	...	...	...	...	299
Docks and other Premises, ...	...	...	...	...	175
					<u>1,399</u>

The total number of rats caught by trapping, and found dead after fumigation are classified in the following table:—

Brown Rat.	Black Rat.			Total.
Rattus Norvegicus.	Rattus Rattus.	Rattus Alexandrinus.	Rattus Frugivorous.	
83	1,452	985	1,026	3,546

Of the 3,546 rats trapped or destroyed by fumigation, 465 were submitted to the City Bacteriologist for examination for plague bacilli with negative result. Of the total number 1,969 were males and 1,577 were females.

#### NUISANCES ON SHIPBOARD.

2,785 inspections and reinspections of vessels in harbour were made during the year. The visits to oversea steamers numbered 2,021, and the revisits 726. In oversea sailing vessels, 1 inspection was made and 1 revisit, while 355 coasting steamers and 15 sailing craft were examined, revisits being paid to 31 of the former and 6 of the latter, 128 verbal warnings were given to masters where nuisances of a minor nature were found, and 205 intimations and 6 notices (under the Public Health Act) were served where defects existed. 650 verbal instructions were given, and 64 notices served on masters of vessels *re* locking-up of water-closet accommodation while vessels were in port.

The nuisances discovered numbered 2,448—in forecastles, rooms, &c., 705, and water-closets, wash-houses, &c., 318, while structural

defects were found in 609 instances—485 within crews' quarters, and 124 in water-closet and lavatory compartments. General complaints were recorded in 816 instances.

*Sanitary Defects and Nuisances.*—The following table shows the nuisances found on board vessels arriving in the harbour—

#### ARISING FROM STRUCTURAL DEFECTS.

##### *Forecastles, Rooms, &c.*—

	1927.	1928.	1929.
Overhead decks leaking, ... ..	75	73	104
Ports defective, ... ..	190	127	205
Skylights out of repair, ... ..	3	3	4
Without scupper-pipe or same cemented, ...	—	2	1
Ventilators plugged, out of repair or unshipped,	1	2	3
Without bogies or funnels, or such out of repair,	11	11	14
Inadequately lighted or ventilated, ... ..	6	21	19
Radiators or steam-pipes defective, ... ..	20	20	18
Doors to forepeak and forecastle broken, ...	5	2	4
Ships' sides leaking, ... ..	—	1	2
Anchor chain exposed by sheathing being out of repair, ... ..	2	1	1
Doors of food lockers and seats out of repair,	20	41	90
Requiring wood sheathing or cork-spraying for "sweat," ... ..	2	3	4
Hawse pipes defective, ... ..	2	2	5
Floors broken and out of repair, ... ..	20	2	4
Bulkhead between forecastle and w.c. compartment broken, ... ..	2	1	2
Scuppers required, ... ..	—	1	3
Waste pipe leaking, ... ..	—	1	2
	<u>359</u>	<u>314</u>	<u>485</u>

##### *Water-closets, Urinals, Wash-houses, &c.*—

Flushing apparatus, basins or discharge pipes defective, ... ..	33	32	33
New water-closet required, ... ..	13	10	16
Ports defective, ... ..	3	2	3
Floor and woodwork out of repair, ... ..	1	2	2
Doors broken and new locks required (w.c.'s must be locked while ship is in harbour),	8	18	21
Ventilators plugged, ... ..	1	3	4
Woodwork of w.c. basin broken, ... ..	32	23	30
Compartments defective in light and ventilation,	12	13	15
	<u>103</u>	<u>103</u>	<u>124</u>

## ARISING FROM MISUSE.

<i>Forecastles, Rooms, &amp;c.—</i>	1927	1928	1929
Alleyways and companionways dirty, ...	100	85	90
Floors, mat coverings, ceilings, woodwork, &c., dirty, ...	138	136	194
Interior of ships' sides or woodwork dirty (to be limewashed or repainted), ...	93	92	125
Galleys dirty, ...	9	12	16
Tables and benches dirty, ...	192	203	244
Scuppers choked (water lying stagnant), ...	19	24	19
Bunks dirty, ...	2	10	17
	553	562	705

*Water-closets, Wash-houses, &c.—*

Floors, ceilings, and woodwork dirty, ...	75	77	111
Basins, hoppers, or troughs fouled, corroded, or choked, ...	113	105	111
Scuppers choked, ...	36	39	40
Wash-house dirty, ...	4	3	5
Interior requiring limewashing or repainting, ...	50	44	47
Waste-pipe defective, ...	2	3	4
	280	271	318

## GENERAL NUISANCES.

Food lockers dirty, ...	257	212	304
Bilges (hold) dirty, ...	64	55	66
Gear and foodstuffs stored in sleeping compart- ments, ...	14	9	14
Drinking water tanks dirty and in need of re- cementing, ...	85	57	70
Drinking-water tanks out of repair or uncovered, ...	2	2	6
Accumulation of rubbish in forecastle or on deck, ...	49	102	143
Forecastle infested with vermin, ...	53	99	121
Bedding dirty or verminous, ...	18	10	91
Bilges ventilating into forecastle, ...	—	—	1
	542	546	816

The following table shows the number of oversea and coastwise ships inspected in the harbour during the years 1927-1929:—

	Inspections.			Re-inspections.		
	1927	1928	1929	1927	1928	1929
Oversea Steam, ...	1,674	1,591	1,650	531	721	726
„ Sail, ...	1	1	1	—	2	1
Coast Steam, ...	282	293	355	22	30	31
„ Sail, ...	30	23	15	4	4	6

						1927	1928	1929
Intimations, ... ..						186	176	205
Warnings, ... ..						138	89	128
Notices, ... ..						7	4	6
Letters to other Port Authorities, ... ..						31	40	52

*Nuisances—*

Functional, ... ..						833	833	1,023
Structural, ... ..						462	417	609
General, ... ..						542	546	816

Of the total arrivals, 1,355 were British and 296 vessels sailed under foreign flags, the latter including 17 different nationalities, Americans, Norwegians, Spaniards, Germans, Jugo-Slavians, Swedes, and Finns predominating.

*Pollution of River.*—In order to reduce pollution of the river, the Clyde Navigation Trustees some years ago provided water-closet accommodation ashore for seamen. Intimation is therefore given to masters that all conveniences aboard ship must be kept locked while ship is in port. Complaints are frequently received from Deputy Harbour Masters, and others that the nuisance still continues. There is, however, no legal power under which action can be taken, at least so far as obtaining a conviction.

*Rags, Hair, Hides, and Bones.*—The following table shows the imports of rags, hair, hides, and bones, with the source of origin and number of shipments:—

Source of Origin.			No. of Ships.	Rags.	No. of Ships.	Hair (Various)	No. of Ships.	Hides (Various).	No. of Ships.	Bones.
				Bdles.		Bdles.		Bdles.		Bags.
Continent, ... ..			59	1,860	41	1,250	93	35,419	—	—
Canada, ... ..			—	—	6	538	3	81	—	—
United States, ... ..			4	108	57	8,544	13	437	—	—
South America, ... ..			—	—	6	356	2	5,798	3	214
Australia & N. Zealand, ... ..			—	—	—	—	25	4,377	—	—
India, ... ..			1	1	—	—	10	3,285	7	1,776
South Africa, ... ..			—	—	—	—	7	512	1	147

In addition to the foregoing, there is a considerable quantity of rags imported from Irish Free State ports.

## UNSOOUND FOOD REGULATIONS.

The following table shows the character and quantity of the food-stuffs imported direct during 1929 (but does not include coastwise



or transhipped cargoes), a percentage of which was examined by the Food Inspectors before removal:—

Article.	Weight.		Article.	Weight.	
	Tons.	Cwts.		Tons.	Cwts.
Apples, ... ..	35,735	5	Lemons, ... ..	3,312	18
Apricots, ... ..	222	18	Liquorice, ... ..	39	4
Almonds, ... ..	982	4	Meal (various), ...	25,366	14
Bananas, ... ..	101	1	Meats (canned, &c.),	3,341	11
Bacon, ... ..	172	15	Melons, ... ..	1,886	16
Baking Powder, ...	129	3	Milk (canned), ...	70	18
Barley, ... ..	31,273	7	Milk (powder), ...	365	14
Butter, ... ..	1,320	11	Molasses, ... ..	313	16
Cereals (Oats, Rye, &c.)	127,385	12	Macaroni, ... ..	312	4
Cheese, ... ..	4,898	2	Nuts (various), ...	2,629	13
Coffee, ... ..	—	4	Oils (various), ...	12,057	18
Cocoa, ... ..	183	—	Onions, ... ..	54,320	19
Condiments, ... ..	7,179	13	Oranges, ... ..	29,092	3
Confectionery, ...	439	1	Orange and Lemon Peel,	296	17
Cream of Tartar, ...	381	4	Peaches (canned), ...	1,166	5
Eggs, ... ..	43,989	19	Pears, ... ..	1,796	11
Eggs (liquid), ... ..	5,384	17	Pears (canned and dried),	1,757	18
Eggs (albumen), ...	405	13	Pineapples, ... ..	1,814	11
Fish (canned, &c.), ...	721	8	Plums (canned and dried),	629	17
Fruit (canned), ...	3,911	1	Pomegranates, ... ..	176	11
Fruit (dried), ... ..	7,670	6	Potatoes, ... ..	1,752	17
Fruit (pulp), ... ..	802	12	Peas, ... ..	9,810	5
Flour (various), ...	145,618	2	Rice, ... ..	6,218	—
Farinaceous Foods, ...	1,923	17	Sundries, ... ..	6,935	17
Glucose, ... ..	4,469	17	Sugar, ... ..	6,937	10
Grapes, ... ..	4,267	6	Syrup, ... ..	60	11
Grape-Fruit, ... ..	889	17	Tomatoes, ... ..	219	15
Ham, ... ..	9,875	17	Tomatoes (canned), ...	1,212	16
Honey, ... ..	112	13	Vegetables (canned), ...	1,279	19
Lard (pure), ... ..	3,061	3	Wheat, ... ..	180,093	8
Lard (compo), ... ..	186	3			
Total weight, ... ..		798,764 tons 7 cwts.			

The following foodstuffs were found unfit and disposed of to the satisfaction of the Medical Officer of Health:—

Article.	Weight.		Article.	Weight.	
	Cwts.	Qrs.		Cwts.	Qrs.
Apples, ... ..	45	—	Grain (Wheat, &c.), ...	47	—
Apricot Pulp, ... ..	3	1	Grape-Fruit, ... ..	5	2
Biscuits, ... ..	2	2	Ham and Bacon, ...	8	1
Cheese, ... ..	5	3	Lard, ... ..	150	—
Dessicated Coconut, ...	31	1	Meats (canned, &c.), ...	4	2
Fats and Grease, ...	536	2	Oranges, ... ..	6,324	—
Fish (canned), ... ..	—	2	Pears, ... ..	15	1
Flour, ... ..	332	—	Rice, ... ..	—	3
Fruits (canned), ... ..	1	3	Tomatoes (canned), ...	2	1
Fruits (dried), ... ..	8	1			
Total weight, ... ..		7,524 cwts. 1 qr.			

The foregoing table shows the great variety of the foodstuffs inspected and dealt with. The method of procedure in each case is similar. The suspected foodstuffs are detained for further inspection, the consignee is communicated with and a suitable time fixed for the re-examination of the material. As a rule, the consignees, on being

satisfied as to the unsoundness of the food, are amenable to reason, and empower the inspector to have the condemned food disposed of, thereby obviating the necessity for obtaining a warrant from the Sheriff or Magistrate. Much time is often taken up in examining and supervising the reconditioning of consignments.

*Damaged Cheese.*—A vessel arrived here on 3rd August from New Zealand ports, *via* Panama Canal, New York and Avonmouth. Crates of cheese, discharged from one of the refrigerating chambers, were in a very unsatisfactory condition, and investigation was made to determine, if possible, the source and extent of the damage. The chief refrigerating engineer stated that the water which had accumulated in the chamber was the condensation of the frost covering the brine pipes, which could not escape owing to the scupper grids being choked with sawdust and dirt. Samples of the water and also of the damaged cheese were taken and submitted for analysis and bacteriological examination. In the meantime the affected part of the consignment was detained until the controlling party could be communicated with.

The bacteriologist reported that there was no faecal contamination in the sample of water submitted, while the City Analyst stated that the cheese was unfit for human consumption, and that the sample of water contained a sediment which was principally sawdust. The cheese having been immersed in this water for a considerable time, it was decided to demand that the cheese be reconditioned, the depth of the cut being determined by the extent of penetration by the stagnant water.

As is usual with consignments of foodstuffs damaged by contamination, the broker for the insurance company is always anxious to salvage as much as possible with a view to minimising the financial loss. This process is always a source of trouble, and much time is taken up in the supervision and continuous inspection of the material which is being dealt with. In this instance the contaminated water had penetrated the cheese to a considerable depth, and one of the firms who had purchased part of the consignment had to cut  $2\frac{1}{4}$  cwts. from five crates, while another removed only  $1\frac{1}{4}$  cwts. from seven crates. Not until the middle of September was the matter finally cleared up, as buyers had to be found before the cheeses were cut, and this was difficult as, owing to reconditioning and the quality being poor, immediate disposal for consumption thereafter was necessary.

*Damaged Bacon.*—On 3rd June, 1929, a letter was received from a firm of marine insurance surveyors, stating that a shipment of 13 bales of bacon marked "G. E. S." had arrived from Rotterdam in a discoloured condition, and instructions were asked as to what action should be taken with the consignment, which had been placed in a store.

Arrangements were made for the examination of the bacon in conjunction with the interested parties on 6th June, when it was noted that part of the parcel had been subjected to smoking, and that 22 sides of the bacon were more or less discoloured with a greenish-blue stain. The consignment was detained, and portions of the stained bacon and jute coverings were submitted to the City Analyst, who reported the presence of copper salts in both the bacon and jute wrapping, in quantities varying from 0.66 to 6.18 grains per pound.

On receipt of the Analyst's report, a further meeting was arranged with the surveyor, the consignee, and a representative of the importer, when it was agreed that the parts of the bacon contaminated with salts of copper be condemned. It was decided then to cut the sides in four and reject any part which was stained. This was done, and the condemned material was removed for the manufacture of tallow.

Three further consignments, which arrived here on the 21st June, 13th December, and 26th December respectively, were dealt with in a similar manner, the waste material, as before, being released for technical purposes.

Total weight of material condemned, 9 cwts., 2 qrs., 23 lbs.

*Imported Inedible Fats.*—Under the Public Health (Imported Meat) Regulations, 1925, the definition of "meat" includes "any edible part of a pig or of cattle or a substance, compound, material or article of which an edible part of a pig or of cattle is an ingredient." Thus "lard, dripping, edible tallow and similar rendered fats" fall into the category of "meat." The second schedule of the Regulations details "Conditionally Admissible Meat," and item (b) thereof comprises "lard, dripping, tallow and similar rendered fats."

Part III.—Oversea Meat—Section II., Sub-section (4), states:—

"If the Responsible Officer is of the opinion that any oversea meat comprises "Conditionally Admissible Meat" without an Official Certificate, he shall by notice forbid the removal of the meat, unless for exportation, or for use for manufacturing purposes not compatible with human food. An "Official Certificate" means a certificate, label, mark, stamp or other voucher attached to oversea meat, or package containing such meat, by a competent authority in the country of export, which is recognised by the Minister of Health as evidence of freedom from disease in the animal from which the meat is obtained, and of dressing, preparing, and packing with all proper precautions."

Uncertificated fat from overseas is therefore liable to be detained on arrival unless a guarantee has been received that the material is intended for technical or manufacturing purposes apart from food.

It has been noted that material which is really "edible" is freely used in manufacturing processes, and material which, upon examina-

tion, is "inedible" is made use of in preparing cooking fats, &c. The term "edible," so far as tallows are concerned, is *very* wide, and misunderstandings between importers and the responsible officer arise.

To establish over these fats a measure of control by the responsible officer, and, at the same time, minimise delay in delivery, the importers have been requested on arrival of "uncertificated" material to submit in writing a guarantee that the "fats" are for "technical" purposes only, giving at the same time the name, address, &c., of the buyer.

## PUBLIC HEALTH (PRESERVATIVES, &c., IN FOOD) REGULATIONS (SCOTLAND), 1925.

The above Regulations apply to all imported articles of foodstuffs except where these are intended for re-export or for use as ships' stores. The following paragraphs give an indication of the administration of these Regulations, so far as they come within the purview of the Port Local Authority.

A letter was received from the Scottish Board of Health intimating that they had reason to believe that oranges were being treated prior to shipment, by being dipped in preparations containing boric acid and formaldehyde, and requesting that samples might be obtained and the results of analyses communicated to the Board. The following table shows the number, country of origin, and Analyst's report on samples which have been taken during the year:—

No. of Samples.	Country of Origin.	Analyst's Report.			
14	Spain ...	Boron preservatives, expressed in grains of Boric Acid, per lb. ... ..			
					0·01 to 0·17
5	California, ...	"	"	"	0·01 to 0·02
3	Jaffa, ...	"	"	"	0·01 to 0·06

*Note.*—The method adopted in the examination of these samples of oranges was by washing the rhinds with a very slightly alkaline solution; consequently the boron compounds detected in the washing are due not to the trace of boron compounds which are natural to oranges, but to the presence of boron compounds caused by treating or spraying the oranges with a solution containing these substances.

Mr. F. W. Harris, City Analyst, in his report states that none of the samples submitted have been found free from boron. The first examinations were made with reference to the surface treatment of the skin, or peel, of the fruit only and not to the pulp, and a small proportion of boron was present in every case. In later examinations the pulp was also examined, and boron compounds, ranging from .1 to .2 of a grain per lb. were found. This quantity, it may be observed, is naturally present in citrous fruit, and has no relation whatever to the surface treatment of the fruit. While the evidence indicates that some attempt to preserve the fruit by dipping in boron solution is being adopted, an obvious difficulty arises in any attempt to determine the amount of boron which might be regarded as having been added to the fruit by the process of treatment.



Samples of grape fruit were also submitted and found to contain boron compounds in varying degrees from 0.01 to 0.02 of a grain per lb.

*Canned Vegetables.*—A consignment of canned peas which arrived at the Port here was found to contain copper sulphate—a compound which is used for the colouring of canned peas and similar vegetables. The peas were detained and the consignee notified. On being informed that the importation of foodstuffs containing colouring matter was a contravention of the Regulations, the consignee made application to be allowed to store the consignment. Permission was granted to do so, and the peas are now in store, pending a decision as to their ultimate disposal.

*Cream.*—Fairly large consignments of cream arrive from the North of Ireland and Irish Free State Ports. During the period from January to December, 41 samples of cream were obtained and submitted to the City Analyst for examination, who reported that, in five instances, the presence of boron preservative was detected.

*Ham and Bacon.*—During the year various consignments of ham and bacon in small lots, usually 2 boxes at a time, and packed in borax arrived at the Port here. In every instance the arrivals of consignments were notified by the consignees and immediately the goods were sold the name of the purchaser was also supplied. The premises of the purchasers were visited and it was noted that, in all cases, the ham and bacon were intended for and would only be used for ships' stores. This being in conformity with the Regulations, no further action was considered necessary. The number of boxes so dealt with was 63 of ham and 110 of bacon.

#### ARSENIC IN APPLES.

Of 49 samples of various brands of apples, 17 were reported as containing no arsenic. Of the remaining 32 samples, 30 contained arsenic within the prescribed limit, and 2 contained 1-100th of a grain per lb. Thirty-eight of the samples were taken from apples landed here from North American Ports, and 11 were from Australasian and Canadian ports. Of the 11 samples taken from these latter ports, the arsenic found was well within the limit.

It was not considered necessary to condemn any of the fruit, and no instance occurred in which sickness could be attributed to its consumption.



## FOODSTUFFS EXAMINED.

During the year foodstuffs were sampled and submitted to the City Analyst, who reported as follows:—

Article.	Samples Reported.		Notes on Defective Samples.
	Fit for Human Consumption.	Unfit for Human Consumption or not in conformity with Regulations.	
Almonds, ... ..	1	—	
Apples, ... ..	49	—	
Apricot Pulp, ... ..	2	1	Burst and blown; $3\frac{1}{4}$ cwts. condemned.
Baking Powder, ... ..	3	—	
Blackberries, ... ..	2	—	
Butter, ... ..	30	—	
Butter Substitute, ... ..	1	—	
Buttermilk, ... ..	1	—	
Cereals (Grape Nuts, Force, &c.), ... ..	13	—	
Coffee Substitute, ... ..	2	—	
Cheese, ... ..	5	3	Contaminated with stagnant water. $5\frac{3}{4}$ cwts. condemned.
Cherries (in brine), ... ..	2	—	
Confectionery, ... ..	18	—	
Cream, ... ..	36	5	Contained boron preservative.
Cream of Tartar, ... ..	17	4	Contained an excessive quantity of lead and arsenic.
Egg Yolk (liquid), ... ..	3	—	
Egg Albumen, ... ..	3	—	
Egg Whole (liquid), ... ..	2	—	
Fats (various), ... ..	47	20	Rancid and decomposing, containing an excess of free fatty acids.
Fish (canned, &c.), ... ..	16	—	
Flour (various), ... ..	2	—	
Fruits (dried), ... ..	65	1	Damaged by "sweat" and heat. $8\frac{1}{4}$ cwts. condemned.
Fruits (canned), ... ..	60	2	Burst and blown. $1\frac{1}{4}$ cwts. condemned.
Grape Fruit, ... ..	1	3	Contained boron preservative.
Grapes, ... ..	1	—	
Gelatine (edible), ... ..	1	—	
Glucose, ... ..	3	—	
Grain (Wheat, Maize, &c.), ... ..	1	1	Damaged by bilge water. 47 cwts. condemned and removed to destructor.
Ginger (dried), ... ..	4	—	
Ham, ... ..	—	3	Contaminated with copper salts.
Honey, ... ..	4	—	
Jam, ... ..	—	—	
Lard, ... ..	11	2	Conditionally admissible meat intended for human consumption. Uncertified, and contained an excess of free fatty acid. 150 cwts. condemned.

Article.	Samples Reported.		Notes on Defective Samples.
	Fit for Human Consumption.	Unfit for Human Consumption or not in conformity with Regulations.	
Macaroni, ... ..	1	—	
Margarine, ... ..	1	—	
Meats (canned, &c.), ...	14	—	
Milk (canned), ... ..	6	—	
Milk (dried), ... ..	2	—	
Molasses, ... ..	1	—	
Oatmeal, ... ..	1	—	
Oils (various), ... ..	22	1	Olive oil. Contained an excess of free fatty acid.
Oranges, ... ..	5	17	Contained boron preservative.
Onions, ... ..	1	—	
Pork and Beans, ... ..	4	—	
Pears, ... ..	1	—	
Sauces, ... ..	4	—	
Sugar, ... ..	4	—	
Soups, ... ..	5	—	
Syrup, ... ..	2	—	
Tartaric Acid, ... ..	3	—	
Tomatoes (canned), ...	13	—	
Treacle, ... ..	1	—	
Vegetables (peas, &c.), ...	16	2	Contained copper sulphate; 8½ cwts. condemned and re-exported.
Water, ... ..	2	1	Water from ship's refrigerating chamber, due to condensation, and which had been in contact with certain foodstuffs.

### FOREIGN MEAT REGULATIONS.

The following statement, compiled from information supplied by the Corporation Veterinary Surgeon, indicated the work done under the Foreign Meat Regulations :—

#### EXAMINED.

BEEF ( <i>Fresh Meat</i> )—				BACON AND HAMS.			
Quarters, ... ..	...	...	6,481	Pork Hams (boxes), ...	...	...	8,405
Boxes, ... ..	...	...	691	„ (tierces), ... ..	...	...	40
Bags, ... ..	...	...	89,786	Bacon (bales), ... ..	...	...	1,578
( <i>Salt Meat</i> )—				Pork Hams (bags), ...	...	...	4,053
Mess Beef (barrels), ...	...	...	2,738	OFFAL.			
Rumps (tierces), ... ..	...	...	98	Ox Tongues (bags), ...	...	...	5,336
VEAL.				Ox Tails, „ ... ..	...	...	1,671
Bags, ... ..	...	...	1,507	Ox Cheeks, „ ... ..	...	...	272
MUTTON AND LAMB.				Ox Livers, „ ... ..	...	...	6,835
Carcases, ... ..	...	...	34,954	Ox Hearts, „ ... ..	...	...	851
PORK.				Calves Tongues (boxes),	...	...	72
Carcases, ... ..	...	...	20,512	Ox Kidneys, „ ... ..	...	...	1,352
Bags, ... ..	...	...	158	Ox Brains, „ ... ..	...	...	181
( <i>Salt Meat</i> )—				Pig Livers (tierces) ...	...	...	5
Mess Pork (barrels), ...	...	...	375	Casings (casks) ... ..	...	...	143
„ (tierces), ... ..	...	...	25				
Beef (bags), ... ..	...	...	286				

#### DESTROYED.

BEEF (bags) ... ..	...	...	286	MUTTON (carcase)...	...	...	1
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## SECTION X.

### HOUSING.

The provision of houses since the War is shown in Appendix Table III., which gives the linings granted during each year to 31st August by the Dean of Guild Court. The numbers granted in 1927 were 5,183, and in 1928 were 6,885, while for last year there was a considerable fall to 3,456. This was, no doubt, due to the completion of some of the Corporation Schemes in the Northern District and in the remaining sections of the Knightswood Scheme. The rate of construction of houses, as shown by linings granted for houses to be erected under housing schemes and by private enterprise, has amounted to an average of 5,500 during the past four years, equivalent to a population of over 22,000 persons per annum, or approximately 90,000 persons over this period. These figures are, of course, irrespective of the considerable volume of building which has been going on in areas outwith the City boundaries.

The size of house for which linings were granted comprised 570 of two apartments (in connection with rehousing schemes), and 1,656 of three apartments (mostly intermediate houses). These together formed 64 per cent. of the total houses. There were fewer linings for four- and five-apartment houses, but there were 82 for houses of larger size, compared with only 17 in the preceding year.

There is no doubt that the situation has been considerably relieved, particularly as regards those who desire and can afford to maintain better standards of housing. A very decided movement and redistribution of population has been taking place for a number of years. There is also evidence that the average number of persons per house is undergoing a gradual reduction. Among the population taken in the mass this means a gradual easing of the situation as regards overcrowding. This relief is, however, very unequal. Overcrowding still remains an obvious factor in the smaller houses, particularly in the single-apartment dwellings in industrial areas. There are three methods by which overcrowding may be roughly measured:—(1) As regards the "ticketed" houses of the City, the proportion found overcrowded according to the standard allotted of 400 cubic feet per adult has not materially increased during the last two or three years. For the year under review the figure is 13 per cent. (2) The custom of sub-letting a room to a second family, which had greatly increased after the War years, is not now so much in evidence, and is tending to diminish. (3) According to special enquiries made in selected areas by the sanitary inspectors' staff, and referred to in their reports, reduction of overcrowding in small houses, particularly one-apartment houses, has diminished very little, and numerous very gross instances are recorded.

The whole position is complicated by the question of rental and by the prevailing unemployment. For many overcrowded families the rentals of new houses are beyond their means, and there is a continual conflict between hygiene and economics. The most important housing question of the moment is the provision of houses within the competence of the small wage earner to afford, a problem which is even more clamant than slum clearance and rehousing.

*Procedure under Improvement Schemes.*—Experience of the procedure for dealing with uninhabitable houses and unhealthy areas under the Housing (Scotland) Act having disclosed certain difficulties, the following memorandum was prepared in view of possible early revision of the Act.

#### HOUSING (SCOTLAND) ACT, 1925.

As amendments to this Act are now under consideration, the following suggestions are put forward as the result of experience of the slum-clearance and rehousing schemes which have been promoted by the Corporation in recent years. They deal solely with questions of procedure.

I. *Dissents.*—The terms of Section 30 (*b*) require owners and lessees of lands proposed to be taken compulsorily to intimate whether or not they dissent from the taking of their lands under the scheme. The issue of notices in terms of this section may be, and often is, followed by intimation of acquiescence or of dissent, in which case negotiations follow, and a settlement is, as a rule, reached. On the other hand, it frequently happens that no dissent is intimated until the local enquiry opens, and there is nothing to prevent an owner or lessee from appearing at the enquiry and objecting to the scheme. There then follows a series of hurried negotiations and settlements reached while the enquiry is in progress, until the court can settle down to hear evidence as to the definitely opposed portions of the scheme. Besides this, the fact that dissent may be entered at the last minute entails the preparation and production of a very considerable volume of detailed evidence in order to meet any possible objections that may be made at the enquiry. The suggestion is that owners and lessees be given a reasonable time limit in which to lodge their answers to the proposals of the Local Authority, who would then be able to enter into negotiations and effect settlements prior to the date of the official enquiry. The notice under this section would also indicate that if no dissent is intimated by owners and lessees they would be held as concurring in the inclusion of their property in the scheme, and not entitled to appear at the enquiry in opposition to the scheme. The Commissioner would then be able to call for such evidence as would satisfy him as to the soundness of the scheme, and concentrate upon the opposed portions of it.

Should this proposal be given effect to, it would be possible for the amount of evidence statutorily or otherwise required before and

at the enquiry to be reduced to a minimum where agreements had been reached, particularly as the areas themselves are personally inspected by the Commissioner and his assessors.

The advantages of this suggestion would be to enable settlements to be effected prior to the enquiry, to shorten the proceedings at the enquiry, and to limit the production of detailed reports and evidence as to the state of individual properties to those which would be actually contested. It has been customary and convenient to proceed with improvement schemes in Glasgow by representing a group of approximately one thousand houses at a time. In a proportion of these only has there been any real contest over the question of habitability, and the suggestion made above would greatly simplify and shorten the procedure in all its details up to the confirmation of the scheme by the Government.

II. *Representations.*—In so far as slum clearance and rehousing are concerned, two separate procedures are laid down in the Housing Act for effecting the same purpose, the closure and demolition of uninhabitable houses.

Under Part I. of the Act procedure is by way of closing order, with right of appeal to the sheriff within fourteen days. When the order becomes operative, the owner may render the house fit for habitation with the right of appeal should the Local Authority refuse to determine the order. There then arises, after an interval of three months, the question of demolition of the house, when a demolition order may be made after hearing the owner. At each successive stage the owner has an opportunity of rendering the house fit for habitation, with right of appeal to the sheriff.

It is clear that Part I. is intended to strike at individual houses standing on their own ground. It does not readily lend itself to procedure against (a) basement houses in tenements where the rest of the building contains habitable houses; (b) uninhabitable houses forming the upper flat of shops and business premises; and (c) tenements composed of individual houses where it may be difficult to allege uninhabitability against all the contained dwellings. On the other hand, it has this advantage, that there is no necessity for the Local Authority to acquire the site.

Under Part II. of the Act, procedure is by way of Improvement or Reconstruction Schemes. These are applicable to unhealthy areas, the criterion being that the evils connected with the area or areas can be most satisfactorily removed by a scheme prepared for this specific purpose. In Glasgow five such schemes have been prepared and approved, involving approximately 5,000 houses, composed of small and moderately large areas containing groups of tenement houses with various added properties included for efficiency, mainly in order to relieve congestion and thin out over-built sites, or in some instances to provide suitable sites for rehousing—the whole procedure representing somewhat imperfect efforts at town planning in miniature.



In the preparation of comprehensive schemes of slum clearance and rehousing, there are two points which merit attention. These schemes involve the acquisition of land and the demolition of houses and such other buildings as may be included for efficiency. Up till recently the Act was interpreted to mean that land taken under the scheme could be devoted to one of the four following purposes:— (a) converted into an open space: (b) utilised for rehousing a displaced population; (c) sold or leased to persons under condition that they carried out the provisions of the scheme; or (d) retained by the Local Authority for such purposes as they might require, or, in other words, retained for future development. According to a ruling obtained in the King's Bench Division in December of last year, it was held that "there was nothing in the Act to authorise a Local Authority to take, or the minister to approve an unrestricted power to sell or lease the lands compulsorily acquired." This judgment, known as the "Derby Judgment," imposes a severe restriction on the scope of improvement schemes. The destination of the sites acquired must be clear and specific, and must fall under one or other of the first three heads. It would appear to be *ultra vires* to acquire and reserve land for a purpose which cannot immediately be specified.

As applied to Glasgow, this would appear to imply that a site cannot be retained for future development. It is obvious that in the progressive development of a large industrial area no one can say what the ultimate destination of a particular site may be; this is dependent on its situation and surroundings. For instance, the clearing away of the contents of a hollow square may partake of the nature of a temporary and necessary improvement, the space cleared after demolition being left vacant, but the future may change the whole character of the area. It may become an important business and industrial centre, rendering obsolete the necessity for the retention of the open space. Decisions to retain control of small areas as open spaces in order to prevent repetition of over-building, while undoubtedly essential and wise at the moment, may quite well conflict with future ideas suggested by the changing character of the neighbourhood or by a later and more comprehensive lay-out of the ground under a town-planning scheme. These considerations are applicable to a considerable number of sites throughout the City.

For these reasons it has been customary for the Local Authority in its later schemes to destine cleared sites for "future development," in so far as they are not required for rehousing or allowed to be retained by the owners for use in accordance with the purposes of the scheme. If the recent judgment precludes the exercise of this power, it should be brought within the provisions of the Act.

The second point concerns the dual procedure laid down in the Act for dealing with uninhabitable properties. As regards slum clearance and rehousing, the policy is to attack insanitary areas and insanitary properties in various parts of the City by means of comprehensive schemes, giving preference to the worst areas and

properties. Schemes under Part II. of the Act carry with them the obligation to acquire the ground on which the represented properties stand unless the owner consents to retain and use it in accordance with the provisions of the scheme. Where the Local Authority desires simply to deal with a particular property and deems it unnecessary to acquire the site, an entirely different procedure under Part I. is necessary, by way of closing order, before a different tribunal.

It would be an extremely useful measure if the same procedure could be adopted as regards both categories. For instance, where a comprehensive scheme of slum clearance and rehousing is entered upon, the representation could include properties falling under either part of the Act. The areas and properties represented could then be dealt with together as a uniform scheme, questions of habitability and suitability of the rehousing arrangements being adjudicated upon by the same tribunal as now hears evidence prepared under Part II. schemes. The Local Authority could then make its preparations for rehousing the displaced tenants as a whole, and not as the end result of two different procedures. This suggested unification of procedure for the purpose above mentioned need not disturb the rights which an owner has under the clauses of Part I. of the Act. Alteration of the law in this direction would conduce to greater elasticity and ease in the prosecution of slum-clearance and rehousing schemes. Alternatively, there might be added to Part II. of the Act a proviso that a Local Authority may include as part of an improvement scheme a property whose site it does not need to acquire.

21st May, 1929.

## SLUM CLEARANCE AND REHOUSING SCHEMES.

Since 1923 improvement schemes associated with rehousing have been promoted in respect of 5,110 houses, comprising areas throughout the City, selected on the principles of giving precedence to the most uninhabitable tenements, which were dealt with either singly or in groups. By this procedure a large number of highly insanitary dwellings and unhealthy areas have disappeared, particularly where congestion was greatest and where the principal defects were the exclusion of light and air owing to gross overbuilding. In accordance with this standard of selection, an attack has been made on the notorious "back-land" tenement, a feature of City housing which is rapidly disappearing.

During 1929 a more comprehensive scheme was prepared under Part II. of the Housing (Scotland) Act, 1925, involving a large area in Calton Ward. The representation was submitted to and approved by the Corporation. Some details of the proposed scope of this scheme may be given.

The lands and buildings included in the Calton Improvement Scheme are situated in the Calton Ward, and lie within the following street boundaries:—Well Street and Bain Street, on the west; Gallow-

gate, Claythorn Street, and Millroad Street, on the north; Abercromby Street, on the east; and Stevenson Street, on the south.

The clearance proposed affects a total of 1,311 houses, with a total population of 5,151 persons, of whom 3,677 are adults and 1,474 are children under ten years of age. The 1,311 houses are composed of 611 of one apartment, 636 of two apartments, 61 of three apartments, and 3 of four or more apartments. As 55 of these houses are occupied by more than one family, the number of houses required would be 1,365 if all are to be rehoused. The houses in the scheme regarded as insanitary number 1,184; the remainder, 127, are scheduled as fit for habitation, and are included to make the scheme efficient. The total rentals of the dwelling houses affected by the scheme are £11,443 5s., and of the business premises £4,154, as shown on the Valuation Roll.

An important feature is the density of population which the statistics reveal as regards the area in which the scheme is situated, and as regards this portion of Calton Ward. In the area within the boundaries of the scheme the number of houses per acre is 106, while the density of population reaches the high figure of 418 persons per acre. This is an indication of the congestion of buildings on the site. In Sub-area No. 8 the figure reaches 519 persons per acre.

The area which it is proposed to deal with by an improvement scheme as the best method of remedying the congestion is situated in the middle of a densely populated district. Contiguous to it, on the north and south, there are highly populous areas. For instance, that to the north, bounded by Gallowgate, Abercromby Street, Millroad Street and Claythorn Street, has a population of 3,747 persons and a density of 227 persons per acre. That to the south, between Stevenson Street and London Road, and between Abercromby Street and Bain Street, Moncur Street and Well Street, has a population of 5,348 persons, and a density of 221 persons per acre.

The general death-rate in this area is 22·5 per 1,000 of the population, as compared with 17·8 for Calton Municipal Ward and 13·8 for the City. The death-rate from respiratory diseases for the area is 4·6, as compared with 3·8 for the ward and 2·4 for the City. The death-rate from pulmonary tuberculosis is 1·69 for the area, as compared with 1·14 for the ward and 0·84 for the City. The infant mortality per 1,000 births is 141 for the area, as compared with 128 for the ward and 106 for the City. Certain of the sub-areas give even higher figures.

The characteristics of the area are, therefore, its closely packed formation, the high proportion of houses per acre, the relatively large number of small houses (46 per cent. of one apartment), and the statistical evidence of its unhealthiness.

The congestion of the buildings on the site is added to by business premises of various kinds, many of them projecting into or occupying back courts. Many of these back courts also contain "back lands"

of dwelling houses, of which there are about 30 in various parts of the scheme. This overbuilding has the effect of narrowing the available court yard facilities, and of causing obstruction of the free access of light and air in many parts of the area.

Besides these general defects, the dwelling houses in the scheme are situated in one of the oldest parts of Calton Ward, and many of them are over a hundred years old. They are mostly composed of two- and three-storey tenement buildings, and show the defects of age and decay; many of them are dilapidated. Other defects found in several instances are dark lobbies, back-to-back houses, and absence of dampproof courses.

The purpose of the scheme is to secure the demolition of the insanitary houses in the area, to provide for street widening where required, and for the abolition of certain streets in order to allow of rebuilding on more spacious lines; and to arrange for the rehousing on portions of the area of a proportion of the dispossessed inhabitants, provision being made for the remainder on other sites, in accordance with lay-out plans prepared by the Director of Housing.

The following summary shows the position with regard to demolition and rehousing as at the end of 1929 of the various schemes represented in previous years.

	Number of Houses.			Total Houses in Scheme.
	Demolished.	Closed.	Still Occupied.	
Parliamentary Road Scheme, ...	121	—	—	121
1923 Scheme, ... ..	1,845	13	—	1,858
1926 Scheme, ... ..	1,006	—	—	1,006
1927 Scheme, ... ..	511	229	279	1,019
1928 Scheme, ... ..	137	188	781	1,106
	<u>3,620</u>	<u>430</u>	<u>1,060</u>	<u>5,110</u>

Further details for each scheme are given in the following tables.

(a) GLASGOW (COWCADDENS, &C.) IMPROVEMENT SCHEME, 1923.—Sixty-five houses in this scheme were demolished during the year, leaving only 13 closed houses to be demolished to complete the scheme.

(b) THE GLASGOW IMPROVEMENT SCHEME, 1926.—This scheme was completed during the year.

	1 apt.	2 apts.	3 apts.	4 apts.	Total
<i>Houses closed or unoccupied at commencement of Scheme—</i>					
Number demolished prior to 31st Dec., 1928, ...	1	1	—	—	2
<i>Houses in occupation at commencement of Scheme—</i>					
Number closed and demolished prior to 31st Dec., 1928, ... ..	368	405	39	3	815
Number closed prior to 31st Dec., 1928, and demolished during 1929, ... ..	82	83	12	—	177
Number closed and demolished during 1929, ...	11	1	—	—	12
	<u>461</u>	<u>489</u>	<u>51</u>	<u>3</u>	<u>1,004</u>
Total Houses in Scheme, ... ..	<u>462</u>	<u>490</u>	<u>51</u>	<u>3</u>	<u>1,006</u>



*Number of Families—*

## Transferred to Rehousing Schemes—

Prior to 31st Dec., 1928, ... ..	753
During 1929, ... ..	5
“Substituted” and transferred to Rehousing Schemes—	
Prior to 31st Dec., 1928, ... ..	152
During 1929, ... ..	5
Removed voluntarily or on account of non-payment of rent, &c.—	
Prior to 31st Dec., 1928, ... ..	139
During 1929, ... ..	2
Still to be provided for at 31st Dec., 1929, ... ..	—
Total in Scheme, ... ..	1,056

(c) THE GLASGOW IMPROVEMENT SCHEME, 1927.—Considerable progress was made with this scheme during the year, and at 31st December only 279 houses were occupied.

1 apt. 2 apts. 3 apts. 4 apts. Total.

*Houses closed or unoccupied at commencement of Scheme—*

Number demolished during 1929, ... ..	—	3	—	—	3
Number still to be demolished at 31st Dec., 1929, ... ..	2	—	—	—	2
	2	3	—	—	5

*Houses in occupation at commencement of Scheme—*

Number closed and demolished prior to 31st Dec., 1928, ... ..	23	32	1	—	56
Number closed prior to 31st Dec., 1928, and demolished during 1929, ... ..	31	19	—	—	50
Number closed and demolished during 1929, ... ..	186	197	18	1	402
	240	248	19	1	508
Number closed prior to 31st Dec., 1928, and not demolished at 31st Dec., 1929, ... ..	1	8	—	—	9
Number closed during 1929 and not demolished at 31st Dec., 1929, ... ..	89	122	7	—	218
	90	130	7	—	227
Number still in occupation at 31st Dec., 1929, ... ..	153	116	9	1	279
Total Houses in Scheme, ... ..	485	497	35	2	1,019

*Number of Families—*

## Transferred to Rehousing Schemes—

Prior to 31st Dec., 1928, ... ..	89
During 1929, ... ..	388
“Substituted” and Transferred to Rehousing Schemes—	
During 1928, ... ..	20
„ 1929, ... ..	115
Removed voluntarily or on account of non-payment of rent, &c.—	
During 1928, ... ..	8
„ 1929, ... ..	161
Still to be provided for at 31st Dec., 1929, ... ..	310
	1,091

(d) THE GLASGOW IMPROVEMENT SCHEME, 1928.—Two hundred and seventy-eight additional houses were closed, and 285 families were dealt with during the year.

1 apt. 2 apts. 3 apts. 4 apts. and up. Total.

*Houses closed or unoccupied at commencement of Scheme—*

Number demolished during 1929, ... ..	—	3	—	—	3
„ still to be demolished at 31st Dec., 1929, ... ..	2	2	—	—	4
	2	5	—	—	7



*Houses in occupation at commencement of Scheme—*

Number closed and demolished prior to 31st Dec., 1928, ... ..	9	28	2	—	39
Number closed prior to 31st Dec., 1928, and demolished during 1929, ... ..	—	—	—	—	—
Number closed and demolished during 1929, ... ..	54	40	1	—	95
	63	68	3	—	134
Number closed prior to 31st Dec., 1928, and not demolished at 31st Dec., 1929, ... ..	1	—	—	—	1
Number closed during 1929 and not demolished at 31st Dec., 1929, ... ..	87	86	9	1	183
	88	86	9	1	184
Number still in occupation at 31st Dec., 1929, ... ..	485	271	20	5	781
Total Houses in Scheme, ... ..	638	430	32	6	1,106

*Number of Families—*

Transferred to Rehousing Schemes—					
Prior to 31st Dec., 1928, ... ..	...	...	...	...	30
During 1929, ... ..	...	...	...	...	216
“Substituted” and transferred to Rehousing Schemes—					
Prior to 31st Dec., 1928, ... ..	...	...	...	...	8
During 1929, ... ..	...	...	...	...	30
Removed voluntarily or on account of non-payment of rent, &c.—					
Prior to 31st Dec., 1928, ... ..	...	...	...	...	2
During 1929, ... ..	...	...	...	...	39
Still to be provided for at 31st Dec., 1929, ... ..	...	...	...	...	813
					1,138

## CONDITIONS IN REHOUSING SCHEMES.

The regular house-to-house visitation in these schemes was carried out on the same lines as in former years, tenants lapsing from the “clean” category being transferred to the supervision of the special lady inspectors until they showed sufficient improvement to warrant their re-transfer to the less intensive visitation of the other lady inspectors.

The number of houses in the scheme at the beginning of the year, the number added during the year, and the number of tenants who were evicted, or left for other reasons, are shown in the following table. These figures are corrected for transfers from one house to another within the schemes. These numbered 106.

TABLE I.—POSITION AT 31ST DECEMBER, 1929.

Tenants in occupancy at	Still in Scheme.	Evicted.	Left for Other Reasons.	Total.
1/1/29 ... ..	2,787	221	153	3,161
Obtaining entry during year	734	44	42	820
	3,521	265	195	3,981

In the following table the conditions of the houses in the schemes at the beginning of the year are compared with the conditions obtaining in the same houses at 31st December, 1929. The condition at the end of the year of the houses added during the year, and of all the houses occupied at 31st December is also shown.

TABLE II.

	Condition at beginning of Year of Houses occupied then.		Condition at End of Year.					
	No.	Per cent.	Houses Occupied at Beginning of Year.		Houses Added during Year.		Houses Occupied at End of Year.	
			No.	Per cent.	No.	Per cent.	No.	Per cent.
Clean, ...	2,498	79.0	2,534	80.2	243	67.5	2,777	78.9
Fair, ...	610	19.3	547	17.3	110	30.6	657	18.6
Dirty, ...	53	1.7	80	2.5	7	1.9	87	2.5
Total,	3,161	100.0	3,161	100.0	360	100.0	3,521	100.0

It will be seen that there is practically no change in the various categories amongst the houses under supervision for the full year, the proportion of "clean" tenants being about 80 per cent. as in former years, 19 per cent. of the remainder being in the "fair" category. These proportions also apply to the conditions throughout the schemes at the end of the year.

The lower standard of cleanliness among the tenants introduced during the year, as shown in the table, as compared with the standard obtaining among the tenants under supervision throughout the year, is evidence of the fact that there is considerable improvement effected under the supervision of the lady inspectors.

It is interesting to note the progress made towards cleanliness by these new tenants during the year. The following table will serve to illustrate this.

TABLE III.

			Number at beginning of Occupancy.	Percentage.	Number at End of Year.	Percentage.
Clean, ...	...	...	344	46.9	481	65.5
Fair, ...	...	...	370	50.4	228	31.1
Dirty, ...	...	...	20	2.7	25	3.4
Total, ...	...	...	734	100.0	734	100.0

The following table shows the changes in each category throughout the year, and gives an indication of the numbers passing into a lower group as well as those transferred to the higher ones.

	Condition at beginning of Year or Date of Occupancy.	Number.	Condition at end of Year.		
			Clean.	Fair.	Dirty.
Clean, .....	...	2,608	2,466	140	2
Fair, ...	...	857	309	507	41
Dirty, ...	...	53	2	10	44
Total, ...	...	3,521	2,777	657	87

It will be seen from this table that 140 tenants have gone back from "clean" to "fair" and that two have lapsed to "dirty." It is this back-sliding which prevents the "clean" group from passing beyond the 80 per cent. mark. It may also be deduced that if, despite the supervision of the inspectors, such back-sliding occurs, the standard of cleanliness throughout the schemes would fall rapidly if that supervision were removed since there would be no compensating improvement to set against it.

Three hundred and nine have improved from "fair" to "clean," but 41 have lapsed from "fair" to "dirty." Among those classified as "dirty" ten rose to the "fair" category and two to the "clean" group.

The following table shows the number of tenants who removed during the year.

TABLE IV.

	Tenants removed during 1929.	Percentage of Total Number in Occupation at 31/12/29.
Evicted and left owing rent, ...	265	7.5
Left for other reasons (transfers within the rehousing schemes excluded) ... ..	195	5.5
Total, ... ..	460	13.0

These figures show conclusively that the majority of the tenants are satisfied with their new environment. That the tenants who were evicted for non-payment of rent were also backward as regards cleanliness is shown by the following table.

EVICTED TENANTS.

Condition at beginning.	Number.	Condition on Removal.		
		Clean.	Fair.	Dirty.
Clean, ... ..	115	99	16	—
Fair, ... ..	131	12	117	2
Dirty, ... ..	19	3	1	15
Total, ... ..	265	114	134	17

It will be seen that the various categories in this group have remained practically stationary.

The proportions of the three groups on eviction were as follows:—"Clean," 43 per cent.; "Fair," 50.6 per cent.; and "Dirty," 6.4 per cent.

A comparison of the above table with Table III. will show that the standard of cleanliness among the evicted tenants is much below the average, and that the cleanliness level of the schemes should benefit by their removal.

*Rehousing Schemes.*—Owing to the importance of gauging the results of rehousing, the following reports have been included in the text, in accordance with previous custom. The system of supervision

of tenants transferred to these schemes has evolved into a definite routine procedure as the result of experience. This is difficult and delicate work, the success of which depends on the sociological instincts and wide experience and knowledge of life possessed by those who engage in it. There are many disappointments and numerous difficulties, but it may be firmly asserted that the new tenants maintain a high average standard of cleanliness and orderly behaviour. The benefit to the children is attested not alone by official observation, but by the opinion of head masters in the schools to which the children have been transferred. The Chief Constable has also furnished reports from the divisions in which the houses are situated, all agreeing that these schemes have been satisfactory from the point of view of the police.

#### REPORT ON THE EASTERN DISTRICT SLUM-CLEARANCE SCHEMES.

BY THE SUPERVISING NURSE INSPECTOR.

Until the end of December, 1928, my duty as Nurse-Visitor comprised the supervision of all houses classed as "Fair" and "Dirty" in both the Eastern and Northern Districts of the City. An additional Nurse-Visitor took over these duties in the Northern District in January, 1929. From that date I had charge of the entire supervision of all the Slum Clearance Schemes in the Eastern District, except the "Clean" houses in the Duke Street Scheme.

The Eastern District Schemes are as follows :—

	Total No. of Houses.
Newbank Scheme, ... ..	358
Belvidere Scheme, ... ..	236
Springfield Road Scheme, ... ..	308
Garvald Street Scheme, ... ..	24
Duke Street Scheme, ... ..	216
Burgher Street Scheme, ... ..	12
Parkhead Scheme, ... ..	96
Westmuir Street Scheme, ... ..	36
Total, ... ..	<u>1,286</u>

The last three schemes were completed and fully occupied during 1929.

The following table shows the number of "Clean," "Fair" and "Dirty" houses in each scheme as at December, 1929.

Scheme.	No. of Houses.			Total.
	Clean.	Fair.	Dirty.	
Newbank, ... ..	289	59	10	358
Belvidere, ... ..	186	39	11	236
Springfield Road, ... ..	221	72	15	308
Garvald Street, ... ..	13	9	2	24
Duke Street, ... ..	190	21	5	216
Burgher Street, ... ..	7	5	—	12
Parkhead, ... ..	63	27	6	96
Westmuir Street, ... ..	24	12	—	36
	<u>993</u>	<u>244</u>	<u>49</u>	<u>1,286</u>

In the early months of 1929 a thorough inspection of all the houses in the different schemes was made for the purpose of classifying them in proper order. As formerly, some of the houses were classed as "Clean (?)." During these early visits it was explained to the tenants that until the houses were entirely satisfactory a visit at least once a month would be made, and possibly more often according to the condition of the house.

The following table shows the number of houses transferred from one class to another during each month of the year 1929.

SCHEME.	Condition at beginning of month	CONDITION AT END OF MONTH.											
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Newbank,	{ Clean	15	Clean.	13	Clean.	3	Fair.	4	1	—	2	—	—
	{ Fair	3	20	16	1	11	4	2	5	2	7	2	3
Belvidere,	{ Clean	6	18	—	12	—	—	2	—	—	—	—	—
	{ Fair	17	10	15	10	6	3	5	1	2	3	—	3
Springfield Road,	{ Clean	3	—	10	19	6	10	7	2	1	6	3	—
	{ Fair	3	—	1	7	4	5	4	6	12	2	1	1
Garvald St.	{ Clean	5	3	—	—	1	—	—	—	—	—	—	1
	{ Fair	—	2	—	1	1	1	—	—	2	1	—	—
Duke Street,	{ Clean	—	1	—	2	1	2	—	—	—	—	—	2
	{ Fair	2	1	2	1	3	—	—	1	—	3	—	—
P'khead	{ Clean	—	—	—	—	1	—	—	—	1	—	—	1
	{ Fair	8	18	7	—	—	14	6	16	5	—	—	—
Burgher Street	{ Clean	—	—	—	—	—	—	—	—	1	—	—	—
	{ Fair	—	—	—	—	—	3	1	1	1	—	2	—
W'tmuir Street	{ Clean	—	—	—	—	—	—	—	—	—	—	1	—
	{ Fair	—	—	—	9	10	1	2	—	4	—	—	—

1929 Schemes.



This table shows that in the early months of the year a high number were transferred from "Clean" to "Fair." This is due to some of the houses which were previously classed as "Clean (?)" being placed in a lower category after the special inspection already referred to. Those classed as from "Fair" to "Clean" include tenants in the older schemes whose improvement in cleanliness warranted their transfer to the highest class; new tenants entering clean houses in the older schemes; and tenants entering the new schemes completed during 1929. The last class were in the "Fair" category for a probationary period of two or three months. It will be noticed in the table that by the end of the year there was very little interchange from one class to another, and it may be assumed that as long as the present tenants remain their present category may be considered as permanent, precluding, of course, cases of sickness and hardship arising from unemployment.

During the year a number of the tenants left of their own accord, and others were evicted for non-payment of rent. In all cases of removals an effort was made to get the new address of those removing. This was often difficult to obtain, especially for those evicted, or who made a "moonlight flitting." The usual explanation of those leaving of their own accord was that the house was too far from the place of work, that the rents were too high, or that the rooms were too cold, and that the upkeep of the gas fires could not be maintained. Most of them regretted having to leave, as they said their children were so much more healthy, especially those born in the schemes.

It should be explained that those evicted were given every consideration. In fact, one caretaker complained that some of the magistrates give a month's grace, by which time a new magistrate may be on the bench, and proceedings have to be started anew. From the straitened circumstances of many of those people it is only reasonable that a good deal of latitude should be given to them.

The following table shows the number of removals during the year:—

Scheme.	No. removing "voluntarily."	No. evicted.
Newbank, ... ..	42	11
Belvidere, ... ..	23	5
Springfield Road, ... ..	31	17
Garvald Street, ... ..	3	2
Duke Street, ... ..	26	6
Burgher Street, ... ..	2	1
Parkhead, ... ..	2	2
Westmuir Street, ... ..	—	1

Of this number 53 were exchanges in the schemes.

*Lodgers.*—Sub-letting is, if anything, on the decline. The City Improvements Department greatly help to keep down the lodger trouble by threats of eviction. Others who depended on lodgers to help paying the rent left of their own accord. The following table shows the number of houses with relative and non-relative lodgers:—

Scheme.	No. of Houses.	Houses with Relative Lodgers.	Houses with Non-Relative Lodgers.	Houses with Relative and Non-Relative Lodgers.
Newbank, ...	358	54	10	—
Belvidere, ...	236	14	9	—
Springfield Road, ...	308	43	21	5
Garvald Street, ...	24	8	2	—
Duke Street, ...	216	28	4	1
Parkhead, ...	96	10	3	—
Westmuir Street, ...	36	7	2	—
Burgher Street, ...	12	2	—	—
	1,286	166	51	6

A number of others are suspected of having lodgers. The relationship in many cases is doubtful. This is borne out when tenants are asked about the frequent change of lodgers. They then admit that the former lodgers were not relatives. In all cases where lodgers are suspected to cause overcrowding the night-inspectors are informed, and the suspicion in many cases proves correct.

*Vermin.*—During 1929 a thorough inspection was made of all houses in the different schemes for bugs, and these were found in 305 houses. This may appear a big number, but it was the result of a minute examination, without which many would have escaped detection, especially in the houses classed as "Clean," some of which have been occupied four and five years, and not until this year have bugs been found in them. It must be added that in many of these "Clean" houses only a few bugs were found. The tenants could give no explanation of their presence. Indeed, part of the trouble is the unwillingness of the tenants to admit that there are bugs and some of them are quite indignant when their presence is detected. Only two tenants admitted that any of the inmates were bitten. Strange as this may seem, it must be true, as lots of the tenants are very intelligent, and seem most anxious to get rid of the vermin once their presence is pointed out.

Walls which are papered are an ideal refuge for bugs, and a curious point came to notice in the preference of these pests to a particular kind of paper in which they were invariably found hidden.

This year all furniture and bedding of slum tenants removing to the new schemes were disinfected before removal. In most cases this proved effective, except in the case of some tenants coming from badly infested houses, when the new house was found to be bug-infested, due to bugs carried in old furniture and bedding. In the Parkhead and Westmuir Street Schemes, consisting of 180 houses, all completed and occupied this year, 35 houses had bugs, and of this number six had to be cleared by the City Improvements Department.

When bugs are found the people are advised to remove the wallpaper, scrub all furniture and beds, and clean the pictures. In most schemes crude carbolic can be obtained from the City Improvements Department, when the line given by the caretaker is presented there. In one scheme the caretaker advocates the cleansing being done by the Department. This seems a waste of money, and tends to take away the responsibilities which should, in part at least, lie with the tenant, especially as good results have been obtained by using the carbolic supplied.

The following table shows the number of houses affected and the condition of these houses. The number of houses infested at present is considerably reduced, which shows that the treatment given is proving successful.

Scheme.	No. Infested.	Condition of House.			Cleaned with Carbolic.	Cleaned by C.I.D.	Previously Infected and Treated.
		Clean.	Fair.	Dirty.			
Newbank ...	73	47	22	4	40	33	19
Belvidere, ...	37	21	15	1	20	17	13
Springfield Road, ...	92	46	43	3	52	40	25
Garvald Street, ...	11	3	6	2	—	—	2
Parkhead (1929), ...	26	12	12	2	20	6	—
Westmuir Street (1929)	10	4	5	1	—	—	—
*Burgher Street (1929)	—	—	—	—	—	—	—
Duke Street ...	6	—	4	2	—	—	—

\* Burgher Street consists of 12 houses. In this scheme there is no wooden picture railing, or beading, and it is interesting to note that so far no bugs have been discovered.

*Newbank Scheme.*—Comprises 356 houses. These in December last were classed as 289 "Clean," 59 "Fair," and 10 "Dirty." At the end of 1929 the houses were classed as 271 "Clean," 74 "Fair," and 13 "Dirty." Three of the former "Dirty" class are now in the "Fair" class. The scheme as a whole is satisfactory. The stair and stair windows are better attended to than in some of the other schemes. The "block-house" plots show a fine display of flowers in the summer.

*Belvidere Scheme.*—Consists of 236 houses. These at the end of December, 1929, were classed as 186 "Clean," 39 "Fair," and 11 "Dirty," as compared with 170 "Clean," 61 "Fair," and 17 "Dirty" in December, 1928. The "Dirty" class are mostly in one part of Glamis Road. There is a wide open space here for children to play on, and these seem healthy and show no sign of rickets.

*Duke Street Scheme.*—There are 216 houses in this scheme. One hundred and ninety are "Clean," 21 are "Fair," and 5 "Dirty." The 26 classed as "Fair" and

"Dirty" are under my supervision. There is a permanency about these groups, although both at times reach the "Clean" standard. The general condition of the scheme is reported elsewhere.

*Springfield Road Scheme.*—This scheme has been supervised by me since the beginning of 1929. There are 308 houses, grouped as 221 "Clean," 72 "Fair," and 15 "Dirty." This scheme is still the least satisfactory, but there is a general improvement, especially amongst the "Dirty" class in Lily Street. The rooms and bathrooms are receiving more attention. A stranger visiting Lily Street would, judging from outside, get an impression of slumdom. The plots are neglected, likewise the stairs and stair windows. The children look dirty, and here one meets more women smelling of drink than in the other schemes. The remaining parts are satisfactory, especially the "block houses," where the garden receives a lot of attention and many of the houses are well furnished. Even houses poorly furnished keep tidy windows and well-scrubbed floors.

Sub-letting is very common. Out of 308 houses, 69 have lodgers, who are a source of worry to the caretaker as they move from one house to another. A large number of those tenants taking in lodgers are receiving unemployment benefit or parish relief. They say the rents are too high, but even while receiving money from lodgers they are frequently in court for back rent.

Seventeen tenants, three of whom had "dirty" houses, were evicted for non-payment of rent. The new-comers to these empty houses require less attention, possibly due to the fact that the husbands are working, and that there is consequently less hardship and poverty, or because they have heard that a clean house entails fewer visits from the "sanitary nurse."

*Parkhead, Westmuir Street, and Burgher Street Schemes.*—Parkhead scheme consists of 96 houses, Westmuir Street of 36, and Burgher Street of 12, in all 144 houses. These were completed and occupied during 1929. In the above schemes most of the tenants came from Coalhill and Society Streets, two of the worst slums in the East-end. When visited for the first time each tenant was told that if the house was kept satisfactory not many visits would be paid. The results for this year are really encouraging, considering how poor many of these people are. Eighty-seven are classed as "Clean," 39 "Fair," and 6 "Dirty." Only in two cases have "Clean" tenants been transferred as "Fair," and in both cases the mothers were ill. As far as one can judge, at least from these schemes, there is every indication that the recent slum-dwellers are taking advantage of the chances offered, and are trying their best, especially on receiving a little praise or encouragement.

In summarising the year's work it may be said that there is a general all-round improvement, specially noticeable in the new schemes occupied this year. This proves that where visits are paid at the commencement of occupancy, and the standard of cleanliness expected impressed on the tenants, the results are good.

Regarding the older schemes, the following incident makes one feel that in many cases it is fear of the consequences that induces some of these people to keep their houses in anything like a satisfactory condition. At the beginning of January, 42 houses classed as "Clean," "Fair," and "Dirty" were visited unexpectedly, as they had all been visited within the previous fortnight when they were mostly satisfactory. Of these 42 houses, 6 were dirty, whereas only 5 were previously classed as "Dirty;" 2 of the usually clean homes were only "Fair," and a number of the other "Clean" houses were really only questionably clean. The excuse was "This is Friday," and in the two "Clean" homes found "Fair," that the mothers were at the "steamy." These excuses were poor, and left one with the impression that unless frequent surprise visits were made, the houses received very little attention between visits, and that if they were never visited they would soon be reduced to slums.

On going round one notices that although in many cases the houses are clean, the mothers and young children are dirty. It is rather a delicate matter drawing the mother's attention to their personal cleanliness, and there is no law to compel mothers to attend to the toddler's cleanliness, as there is in the case of school children.

CATHERINE MATHESON.



The following portion of the Annual Report of the Divisional Sanitary Inspector for the Northern Division (Mr. Patterson) deals with rehousing schemes in his area.

*Slum Clearance Re-housing.*—At the end of the year there were 1,358 houses in occupation in the three schemes at Hamiltonhill, Campbell Street, and Germiston. Regular inspection of these was made, and the classification—Clean, Fair, and Dirty—is detailed on page 202. The nurse-inspector whose duty it is to deal with houses classified as “Fair” and “Dirty” in Hamiltonhill and Campbell Street, had also the whole of the 492 occupied houses at Germiston under her supervision. This scheme, which only recently became fully occupied, is notable for the large number of tenants who have left, and the following notes by the nurse-inspector are of interest:—

“It has been interesting to watch the development of Germiston re-housing scheme from the beginning, and to observe the response of the tenants to their new environment. A certain number of them are of the poorest class, and ignorant of even the first principles of hygiene, but most of them do their best, and show a decided tendency to improve under supervision and frequent visitation. Unfortunately, this scheme is not a popular one. It occupies a somewhat isolated situation, and as many of the householders were transferred from Cowcaddens and the south side of the City, it was a big change for them, and in some cases inconvenient with regard to the place of employment. Out of the 492 houses occupied, 140 tenants left during the year, 105 of these being in arrears of rent. Many from the very beginning had no intention of staying, and so took little interest in their houses, and have gone back to the localities from which they came.

Most of these people are not educated up to the standard of appreciating the value of fresh air, space, and good ventilation, with the result that in cold weather there is a tendency in some cases for the whole family to live and sleep in one apartment. Of course, they have few bed-clothes, and what they do have are not very warm, so that one must see their point of view. Complaint, which is not peculiar to this scheme, is made that the gas fires are too expensive to burn for any length of time, and it is stated that it would take many hours steady burning to make the rooms warm and comfortable in cold, damp weather. The electric light bill appears to be a serious difficulty to many of the poorest tenants. They cannot, or, at least, they do not, lay aside money to meet the bill when it comes in, and the result is that I often find the electric light has been cut off, paraffin lamps and candles being used. It would be a decided advantage to these people if a slot meter on the same principle as the gas meter could be provided. On the other hand, it should be stated that the thrifty housewives tell me that the money they get as a rebate from the gas meter goes a long way towards paying the electric light bill.

The want of shopping facilities and the distance they have to go for messages have often been referred to by housewives. There are only three shops near the scheme—a small general store, a dairy, and a recently established public house. Shops are, however, to be provided in the newer portions of the scheme, and this will get over the inconvenience. At one time there were small shops in several of the houses, but all of them were suppressed, one of them, however, only after the tenant had been taken to court.

The lodger question has not been so troublesome here as in other schemes, probably because of the isolated position. At the end of the year there were only eight houses with non-relative lodger families, and these are being dealt with by the Housing Department. At different times during the year the night inspectors visited houses where lodgers were suspected, and warnings were given where necessary.”

Thirty-two families were re-housed from farmed-out houses in Cowcaddens, and of these 20 left in arrears of rent. Half of the remaining tenants are keeping their houses very satisfactorily, while the other half are fair. These tenants all paid 10s. per week regularly for single-apartments in Cowcaddens, and it is strange that so many of them failed to pay the smaller amount for the houses in Germiston. One tenant, who was leaving, told me that in the farmed-out house they just *had* to pay every week or go out at once, while here it was too easy to let the rent slip, and almost hopeless to make up the arrears later.

On the whole, for a new scheme, the houses are being kept in a fairly satisfactory condition. The best type of tenants are interested in their houses and are appreciative, but, of course, there are others who apparently cannot readily shake off the old careless habits. At the end of the year the classification of the houses was as follows:—"Clean," 52 per cent.; "Fair," 42 per cent.; and "Dirty," six per cent.

While it is gratifying to note that the great majority of the tenants in these schemes are well-doing, it is disappointing that so many leave or are ejected for non-payment of rent. In many cases these families drift back to slumdom and to overcrowded conditions in small houses. One or two examples of such families may be informative

(1) A young married couple with two children, who occupied a single apartment in a slum area, were re-housed in a two-apartment house. They occupied the house for three years, but during their occupancy were regarded by our Department as unsatisfactory tenants, and ultimately they were ejected for non-payment of rent. After ejection they took up house in a single apartment in a back land in another area scheduled for clearance. The rent of this house is 5s. per week, although being again in arrears, they are at present paying 7s. per week. The family now consists of the father and mother and four children.

(2) A family consisting of husband and wife and two children—boys of ten and seven years—were re-housed from a farmed-out single-apartment house (for which they paid 10s. per week) to a two-apartment house in Germiston scheme, the rent of which was 7s. 6d. per week. They were unsatisfactory tenants, and after six months they were ejected for non-payment of rent. They then went to a farmed-out house for which they paid 11s. per week, and were next discovered in a single-apartment in Burnside Street. Within the last three years they have lived at six different addresses.

(3) A family consisting of husband and wife and three children were transferred from a back land in Cowcaddens to a two-apartment house in Campbell Street Scheme. During their occupancy they were very unsatisfactory. Considerable trouble was experienced with them, and neither the house nor the children were kept as they ought to have been. After about two years they were ejected for non-payment of rent, and are now occupying an apartment behind a shop, rented at 6s. 5d. per week. Other three children have been born, and the family now consists of eight persons in all.

*Occupancy of Small Houses.*—With reference to the foregoing, attention may be drawn to the recommendation of the Royal Commission on Housing with regard to the occupancy of small houses. In the case of one apartments, the recommendations are to the effect that the occupancy of such houses should be so restricted that they should be occupied only by single persons, or two adult persons of the same sex, or elderly married couples. The overcrowded condition of single-apartment houses is one of the most serious aspects of the whole housing problem, and it would appear to be worth while to consider whether the time has not come when some attempt could be made to give effect to the recommendations referred to, even if meantime it were found practicable to regulate the occupancy of the one-apartment house to only a limited extent. It is suggested, therefore, that consideration should now be given to the question of the desirability of obtaining power to restrict the occupancy of single-apartment houses which become vacant after a given date, so that they should not again be occupied by families in which there are children. Such a restriction would not affect families at present in occupation, but it would interpose a barrier to such families as those referred to above going back to overcrowded single apartments, and would also prevent incoming families to the City taking up their abode in houses of one apartment.

Regulation of the occupancy of two-apartment houses—also referred to in the report of the Commission—is also desirable, and would be necessary if the occupancy of single-apartments were limited as suggested, in order to deal with any tendency to increased overcrowding of the two-apartment houses that might arise.

In connection with the housing schemes of the South-Eastern Division of the City Mr. Thomson reports that:—"The question of bug infestation at these houses continues to give considerable trouble, and at the three schemes in the division, 58 houses had to be treated for this cause during the year. Very stringent methods



of disinfection were carried out, but notwithstanding this it was found in several cases that reinfestation occurred within a few months. In these, measures were again adopted for the extermination of the vermin, but notwithstanding this, bugs again made their appearance in some of the houses, and the tenants were consequently informed that they would now be held responsible, and would be dealt with as undesirable tenants. The bugs were subsequently got rid of, and no reinfestation has so far occurred.

As has been indicated in previous reports, reinfestation of a house after treatment must arise from an outside source, such as the introduction of second-hand furniture, pictures, &c., or by being brought in on personal clothing.

The recurring necessity for carrying out thorough disinfection involves considerable expense and takes up a great portion of the time of the staff, entailing their being taken from other important work, and the time has now come when very definite powers should be obtained for dealing drastically with tenants who allow their houses to become infested, as in practically every case it is due to carelessness or neglect.

The houses in the Polmadie Scheme were the first to be erected in this division, and in them were housed many of the tenants from the back lands in the Gorbals area, which were demolished under the 1923 scheme. While the majority of the houses are clean and well kept, there is nevertheless a larger proportion of careless tenants here than in the other two schemes in this division. The houses of these tenants are usually only fairly clean, and, but for very constant supervision, would be allowed to get into a dirty condition. There appears to be a lack of interest by the tenants in their houses and surroundings, so that even from a general outside view the scheme often looks untidy and uncared for. The front plots are uncultivated; the courts are littered with refuse; and the staircase walls are chalk-marked.

In the Govanhill Scheme the lady inspector reports that the majority of the tenants are doing very well indeed. In a few cases where it was found that houses, formerly clean and well kept, were now found less satisfactory, the reason was due to the fact that the housewife was going out charring or hawking to earn a little money to eke out the family income. The inspectress also reports that many complaints are still made of the expense of the electric heating, and she found in some cases that all the beds had been moved into the living-room, where the whole family slept because, as they said, the bedrooms were too cold, and they could not afford to pay for the electricity required for heating. There have been a larger number of removals from this scheme than from the others, and while a number of these were ejected for non-payment of rent, the majority of them removed voluntarily. Many of these gave as the reason for their going away that they did not like the district, but the lady inspector thinks that in some cases at least they were out of harmony with their new surroundings, and preferred to get back to their old haunts.

The McNeil Street Scheme is the best of the three schemes in the division, and the lady inspector reports:—"Although there are a few undesirables, the tenants as a whole maintain a fairly high standard of cleanliness. Many of them are of the thrifty working class who always keep their homes in a clean condition. Quite a few of the houses are well furnished, new furniture having been got during the year. Only one tenant expressed dissatisfaction with her house, and she left to go back to the old district from which she came. The others are highly pleased with their houses, and like the situation of the scheme, especially those who overlook the Clyde. Many are still unemployed, and find the rent a strain on their resources, but are struggling to pay it rather than go back to their old surroundings.

"The outside appearance of this scheme is always tidy, and more attention is given to the cultivation of the front plots. It is interesting to note that three of the tenants obtained monetary prizes under a scheme promoted by a daily newspaper for the best kept and most tastefully laid-out plots."

## REPORT BY THE CHIEF CONSTABLE ON REHOUSING SCHEMES.

The Chief Constable has recently furnished me with reports by the Superintendents of the Police Divisions in which the rehousing

schemes are situated. These reports are on the whole very satisfactory, and are as follows:—

*Western Division.*—I have to report that the Slum Clearance Scheme in this Division is limited to approximately 140 houses and situated in Yorkhill area. The majority of the tenants were transferred from the demolished slums in Clyde Ferry Street and Piccadilly Street. I am convinced that the environment in which they now find themselves, together with the open and less congested mode of construction of the houses, has enhanced the progress and behaviour of the dwellers. The police experience no trouble with the people, who seem to be taking more interest in their homes and welfare.

*Eastern Division.*—I have to report that, in my opinion, there is a decided improvement in the progress and behaviour of the persons transferred to new houses in connection with slum clearance schemes.

In this Division the slum clearance schemes are:—Newbank, Haghill, Tollcross Road, Springfield Road, and Westmuir Street. Roughly estimated, the total population is at least 5,373, and during the year 1928, only 120 persons, including adults and juveniles, appeared before the court for such offences as assault, breach of the peace, drunkenness, theft, gaming, betting, malicious mischief, and loitering. Twelve of the charges were drunkenness.

During the year 1929 only 94 persons appeared under somewhat similar headings. Only nine of that number appeared on charges of drunkenness, so that it will be seen that the numbers are growing less each year, while the population is increasing. In most cases the public-houses are not convenient to the schemes, and as the old habit of carrying beer in open vessels from the bar to their houses appears so much out of place, it has entirely disappeared. This, I believe, has to a great extent discouraged drinking among women. The child life of the schemes presents a marvellous change. Healthy, well-developed, and rosy-checked children have taken the place of the rickety and pale-faced infants so common to the slum dwellings. With few exceptions the houses are kept clean, tidy, and comfortably furnished.

While it must be admitted that the slum clearance housing schemes have been a boon to the poorer working classes, it must be said of the people themselves, taking them as a whole, that they are making a wonderful response in trying to better themselves in their improved surroundings.

*Southern Division.*—I have to report that there are only two such schemes in this Division. One is situated between M'Neil Street and Adelphi Street, and the other between Logan Street and Elmfoot Street. In the former scheme there are 148 houses, and in the latter 132.

Regarding the progress in mode of living of those transferred, I would say that in the former instance, the people there have done well out of the change of environment, and compare favourably with any working locality in the South-side. In most instances there are small plots of ground in front of the tenements, and these are nicely laid out with beds of flowers, with small wooden fences separating the different portions. The houses are well kept, being set off with curtains of high taste, and the behaviour of the people is remarkably good, but in the latter instance I am unable to speak so highly. The windows and curtains hung up thereon are dirty and the plots of ground unkempt, giving the building a rather squalid appearance and the impression that the people resident therein are still in slumdom. The behaviour of the inhabitants is quite up to the standard of any part of the district.

*Northern Division.*—I beg to report that I am of opinion that a great change for the better in the general conduct of the people who reside in Hamiltonhill area has taken place. This improvement is most noticeable in the children who appear to be thriving and to take advantage of the better facilities granted to them of enjoying the fresh air, instead of being crammed up in back courts, &c.

Of course, the conduct of many is not what it should be, considering what has been done for them. I am told that many take advantage of such places as the Social Centre, the Women's Sewing Class, the Young Women's Christian Association, and the Church Hall, and the tendency is for the number to increase.

The children attending Rockvilla School are also better cared for and are, on the whole, cleaner in their habits. For this, I believe, the school staff are due most credit. The fact that there are no public houses in the area helps to keep the housing scheme quiet. The residents who desire drink have to go further afield, and now and again are locked up in various districts of the City.

*St. Rolox Division.*—I have to report that there are two slum clearance schemes in this Division, viz.:—Hawthorn in Springburn, and Germiston in Garngad Road. The Springburn one has been occupied for a year or two, and I am of opinion that the tenants there have progressed considerably. The Germiston Scheme is not yet completely finished, although a good portion of it has been occupied for over a year, and in my opinion they are also progressing and the behaviour in both schemes has been good.

*Queen's Park Division.*—I have to report that there is only one slum clearance scheme in this Division. It is situated in Govanhill Street, and consists of about 288 houses with an approximate population of 1,200 persons.

I am informed that about 40 of these families have returned to their old haunts, and the others, it would appear, have improved in their general behaviour in their new environment. There has been no appreciable increase in crimes or offences dealt with by the Sheriff and police courts, from this locality, since the persons referred to came to reside there. Generally speaking, and from my former experience in the districts whence these people came, I am of the opinion that progress has been made in this connection, and the fact that these people come to reside in a respectable area has had a progressive effect on them, and their general behaviour has consequently improved considerably. Numerous complaints have certainly been received by the police about the general conduct of some of the residents in this scheme. These complaints have been made by people residing in adjoining properties, who resent conduct which would be tolerated by their neighbours in the districts whence they came.

*Maryhill Division.*—I have to report that Gairbraid Housing Scheme, which comprises Stirrat Street, Niven Street, and part of Gairbraid Avenue, is the only slum clearance in this Division. One hundred and thirty-two of the houses in this scheme are now occupied.

Occupancy was taken up by some of the tenants about six months ago, and the majority formerly resided in Whitelaw Street, Cowal Street, and Lochgilp Street, all in this Division. Many of them are well known to the police, but up to the present it has only been necessary for the police to make one arrest in this scheme, and he was an old offender. The charge was one of breach of the peace and assault while under the influence of liquor. In other eight cases, however, the police have taken action against eight persons residing there. One was for attempted housebreaking, two for assault, one for assault and breach of the peace, one for gaming, one for breach of probation bond, one for drunk and incapable, and one for stone-throwing. None of the arrested persons was a female.

Considering that the population is now about 600, I submit that this is very satisfactory. Any of the tenants to whom the police have spoken are well pleased with the change as the environment has a better effect on the children, and they themselves also feel the benefit. There is certainly an improvement in the behaviour of some of the persons transferred, as is shown by the fact that the police have only once been called to a house there.

*Govan Division.*—I beg to report that soon after these houses were occupied there were many complaints from shopkeepers in the vicinity regarding petty thefts from their shop doors, and periodically there has been rowdiness between rival gangs of youths, caused by their associates from the locality or vicinity which they had left.



Occasionally anonymous letters have been sent to the Superintendent regarding the horse-play which takes place mostly on Sunday afternoons and nights by the youths from this scheme. Their behaviour in general is not unbecoming of such a scheme. The police are often called to houses in this scheme for wives being assaulted. From my own observations the people occupying these houses are doing their best to live up to their surroundings. On two occasions some time ago I had a deputation from the residents in the vicinity of the scheme regarding the conduct of some of the residents and the children in that scheme. They stated that they were afraid to allow their children out of their sight because of the risk of being contaminated by the other children. They pointed out to me that prior to the erection of the rehousing scheme in question, several of them in the adjoining tenement had purchased their houses, otherwise they would not have remained in the district. They also complained of frequent rowdy scenes. These rowdy scenes are in my opinion becoming less frequent, although the residents there still require more than ordinary police attention.

Some time ago one of the tenants there was fined before the court here for keeping her house in a filthy condition, after the statutory notice requesting her to clean her house had been served upon her by the Public Health Department. While many of the residents in the Ibrox districts are of opinion that the scheme referred to should never have been erected in such a respectable locality, I am of opinion that there is at least some improvement in the habits and conduct of the people in the scheme.

*Partick Division.*—I have to report that Earl Street, Scotstoun, is the only rehousing scheme from slum clearance in this district. The people there came mostly from the Anderston district. Their progress and behaviour since coming here show a marked improvement. When they first came the women folk showed signs of slovenliness and untidiness. Frequently they went shopping bareheaded, hair disarranged, faces unwashed, shoes unfastened, and sometimes without boots or shoes. A shawl carelessly thrown over their shoulders afforded them a small measure of protection from cold and rain. After a very short time, however, these women, on seeing better dressed members of their sex moving about in the vicinity, gradually began to take an interest in their own personal appearance. The consequence now is that these quondam slum-dwellers are now comparatively clean and smart as they set out to do their shopping. The wearing of hats is a very noticeable feature in the new garb of these exiles from slumdom. On first settling in the scheme the new tenants were loath to throw off the habits to which they had been accustomed, and they often visited their old haunts and were in turn visited by old friends from the slums. It would appear now, however, that these people are beginning to accustom themselves to their new surroundings, as they are slowly breaking off these ties with their former haunts. In appearance they certainly have improved considerably, and to a person who knew them before, the change is so great that it is with difficulty they can be recognised as these former untidy persons. They give the police very little trouble. The youths at first gave signs of rowdiness, due, presumably, to the additional "elbow-room." They have, however, like their elders, settled down, and now give the police little trouble.

The women keep their houses clean and tidy, and their changed appearance and manner show that when given the opportunity they rose above the conditions under which they had been living in less congenial dwellings. There may be exceptions to what I have said, but I am reporting on their general progress and behaviour.

## CHILDREN IN REHOUSING SCHEMES.

Endeavour has been made from time to time to assess the value of improved environment on the occupants of slum property who have been transferred to Rehousing Schemes. The following memorandum and notes are of interest in relation to the children transferred to schools attended by children of a better social class.

## HOUSING SCHEME ENVIRONMENT AND SCHOOL CHILDREN.

During the course of the year 1928 enquiries were made by Divisional Medical Officers in the schools attended by children from Slum Clearance Re-housing Schemes, and the results of these enquiries were briefly summarised in the Annual Report of the Department for that year in the following paragraphs:—

*“School Children.*—Observations were made throughout the year with a view to ascertaining to what extent altered environment reflected itself in the health and habits of children, more especially among those attending school. Vital statistics are yet too meagre to provide any definite data on which to base conclusions, but so far as they go they seem to indicate a measure of improvement, more especially as regards respiratory diseases.

“Enquiries were also made among the schools adjoining the rehousing schemes, and generally it was found that among the older children, and particularly girls, the association with other children had tended to improvement, both as regards cleanliness and clothing and general behaviour. Among the younger school children the improvement was not so apparent. A degree of antagonism which at first existed between the two groups is gradually being overcome, and in time is likely to disappear altogether. Head masters and teachers have been closely interested in the social problem thus presented, and not a little of the improvement which has been recorded may be ascribed to their efforts to overcome such difficulties as at first presented themselves.”

These observations have been continued, and I enclose herewith copy of a further report which has been prepared by Dr. Gunn, Medical Officer for the Eastern Division. I suggest that this letter and Dr. Gunn's report, with its appendices, be circulated among the members of the Sub-Committee on Insanitary Areas, for their information.

The reports by the headmasters are, I think, to be regarded as indicating a satisfactory degree of improvement among the children transferred from slum areas to re-housing schemes.

7th October, 1929.

A. S. M. MACGREGOR.

The following report may be regarded as a continuation of one on the same subject, which was drawn up on 26th December, 1928:—

The observations were again made by the headmasters, from the particular reports on each individual furnished by the class teachers of Springfield, Newlands (Springfield Road), London Road, Bluevale, and St. Michael's Schools, and they cover the period from January to the Summer Vacation, 1929.

In the former report it was remarked that there had been a distinct improvement in the children from the rehousing areas, and the present report may be summed up by recording a continuation of this progress. There is appended a copy of the reports of each of the headmasters, some more critical than others, but all favourably commenting on the development of the children; in fact, they reflect very considerable success of slum clearance.

Where the progress of the individuals has not been good there has been unanimity among the headmasters and teachers that this is entirely due to laxity on the part of the parents; in most of these cases too the Nurse-Inspector from this Department reports unfavourably on the cleanliness of the houses from which these children come. These are from the “10 per cent.” who do not take advantage of the benefits offered them.

This aspect of the social side of slum clearance will be further observed in order that the life of these same children may be followed through the whole or as much of their school career as possible.

5th October, 1929.

*Springfield School.*—“In framing this report on the progress of children living in rehousing schemes I asked the staff to take 10 as the possible number of marks obtainable under each of the headings. Undernoted are the marks obtained by children



in the rehousing schemes, and alongside are the marks obtained by children in other houses. The different marks, of course, represent averages for the whole school:—

			Rehousing Scheme Children.	Children in Other Houses.
Cleanliness,	...	...	7.0	8.0
Nutrition,	...	...	7.2	8.3
Intelligence,	...	...	6.6	7.6
Discipline,	...	...	7.9	8.2
Clothing, ...	...	...	6.6	7.9
Punctuality,	...	...	7.7	7.7
Precocity,	...	...	3.5	3.5
Sociability,	...	...	7.0	6.8

Compared with children in other houses a very much larger percentage of children in rehousing schemes receive aid in clothing and food. This must be taken into account in assessing the value of the marks given for nutrition and clothing.

On the whole, however, I feel it can be confidently stated that the rehousing scheme children are definitely continuing to improve. On certain points they are practically on terms of equality with other children. This is specially noticeable in discipline, punctuality, and sociability. All along there has been no marked difference in discipline and punctuality.

DUNCAN M. SUTHERLAND, *Headmaster.*"

*Newlands School.*—"With the help of the members of the staff I have made a thorough investigation into all cases of pupils who have removed into the new houses under the housing schemes in this district. On the average only about four or five pupils in each class have undergone the change of abode, and in the majority of cases they have all improved in health, cleanliness, and self-respect. They appear better clothed and better fed, and look as if they were getting more fresh air.

In a few cases the clothing and boots are poor, showing that the parents have an economic struggle through the effects of bad trade. In every case the children themselves enjoy the change, and would not care to go back to their old homes.

I append notes on the heads as suggested in your letter:—

*Cleanliness.*—Good; much improved.

*Nutrition.*—Very good. Fair in only two cases.

*Intelligence.*—Very good in some cases. Good in the majority. Fair in three cases.

*Discipline.*—Very good on the whole. Courteous and mannerly.

*Clothing.*—Good on the whole.

*Punctuality.*—Very good.

*Precocity.*—Normal; no backwardness shown. Bright and anxious to excel.

*Sociability.*—Very good.

WILLIAM JAMIESON, *Headmaster.*"

*London Road School.*—The headmaster in London Road School, Mr. Falconer, has not been long in this charge, and he gave me his report verbally.

He has formed the opinion that the progress under the headings already indicated in this report has been very satisfactory, and is very similar to that of the headmasters whose reports are detailed above.

*St. Michael's School.*—"This school has at present 320 children whose addresses are in the slum clearance schemes.

After a personal investigation of each, and after hearing the teachers' opinions, I have much pleasure in reporting that they were almost all well-clad, healthy-looking, and educationally normal when tested.

Evidently the change from "slumdom" to something better is having a great effect for good on the children, and I, for one, am wholeheartedly in favour of hastening on such good work.

JOHN DONAGHY, *Headmaster.*"

*Bluevale School.*—"The collating of the reports from the different classes of the school shows that an advance in most directions has been made by the pupils from the Slum Clearance Scheme, Duke Street.

The chief failures are:—

*Clothing and Cleanliness.*—(1) In the matter of clothing, which even in the worst cases is ample, but which could be better cared for as regards general tidiness, mending, and washing. (There are a few cases of "verminous" children, and about 7 per cent. of the Slum Clearance Scheme children are sent to be examined for "Cleanliness" by the Public Health Department nurse.)

*Punctuality.*—(2) In the matter of punctuality, wherein the parents of a number of families seem shameless as regards offering the excuse of "sleeping in."

*Nutrition.*—In the matter of nutrition the standard is fairly good, with a few instances of "much below the average."

*Precocity.*—As regards precocity, there is a little indication of superficial "street" smartness, but none of exceptionally early intellectual development.

*General.*—In all respects there seems to be little to distinguish the average Slum Clearance Scheme child from the average "other" pupil. Some are very bright, while others are very dull. There is no evidence of ostracism, but one Slum Clearance child in the Infant Department seems to hold aloof through shyness; on the other hand, one at the same stage is aggressive even towards indiscipline.

It is to be added that 20 per cent. of the Slum Clearance children attend the School Clinic, or have attended during the past session.

It is to be noted that the "failures" remarks are not to be taken as applying generally to the Slum Clearance Scheme pupils, but as signifying the categories where the position is worst, or where the advance has been least.

JOHN W. BARTON, *Headmaster.*"

## REHOUSING OF TUBERCULOUS FAMILIES

In January the Housing Committee of the Corporation, following on conferences with representatives of the Health Committee, resolved that ten per cent. of the Intermediate type of houses should be allocated to families where a tuberculous person had to share a sleeping-room with children or adolescents, having regard, of course, to the conditions laid down generally as to the letting of the Intermediate type of house, the allocation being made by the General Manager of the City Improvements Department on the recommendation of the Medical Officer of Health.

Lists were prepared at the commencement of the scheme and at intervals since then, of families coming within the above category, and forwarded to the City Improvements Department. The total number of recommendations during the year was 462. Up till 31st December 71 families had been accommodated, mostly in houses of the Intermediate type, but including some in the ordinary type of of house. The following table shows the action taken with regard to the 462 recommendations.

Allotted houses, ... ..	71
Waiting for vacancies in present schemes, or in schemes in course of erection, ... ..	124
Waiting for cheaper type of Intermediate house, ... ..	59
<i>Negotiations with Improvements Department not completed—</i>	
Sent to look at house but did not call back, ... ..	12
Desires smaller house than that offered, ... ..	3
Unsatisfactory reference from factor, ... ..	3
Asks that application be delayed, ... ..	7
Unable to pay rental of Intermediate Scheme, ... ..	29
Not eligible, ... ..	1
Schemes too far away, ... ..	14

No response by applicant to postcard from City Improvements Department—

Reason unknown, ... ..	26
Gone away and left no address, ... ..	9
	<hr/> 35

Does not now wish a Corporation House—

Reason not stated, ... ..	5
Suited elsewhere,... ..	32
Patient dead, ... ..	15
	<hr/> 52

Improvements Department still to report on recommendations, ... ..	52
	<hr/> 462

## PREVENTION OF BUG INFESTATION.

### FURTHER NOTES ON THE LIFE HISTORY OF THE BED BUG.

(*Cimex Lectularius*).

The following report is a continuation of the two previous reports on the same subject which are to be found in two Annual Reports of the M.O.H., Glasgow; 1927, page 197, and 1928, page 167.

No disinfectant has yet been produced which is a panacea for the destruction of this insect when it successfully establishes itself in old or new houses. As has already been stated and reiterated, constant and scrupulous cleanliness alone can prevent houses from becoming infested, or accomplish the clearing of those which have become infested. It has also been stated in the previous reports that those whose duty it is to advise householders on this subject must themselves have an intimate and practical knowledge of the life history of the bug, and there is nothing further to add to this injunction.

*Longevity of the Bug.*—At present, 22nd April, 1930, there is under observation in this Department a brood of nine bugs hatched in August, 1928, from eggs laid by one female. It is interesting to note the dates upon which they have been fed. They are as follows:—31st August and 8th November, 1928, 23rd and 31st January, 21st March, 18th April, 24th May, 27th June, 11th and 29th July, 30th August, 16th October, 14th and 21st November, and 19th December, 1929, and 30th January and 1st April, 1930.

This family of bugs has been kept under glass (a Petrie capsule), and the feeding has consisted in their being placed on the observer's arm and allowed to gorge themselves. They are now about eighteen months old, and have been fed seventeen times, one interval of starvation extending over three months, which is not a record of endurance for the bug.

*Second Generation.*—Inbreeding has also taken place among this family. On 24th May, 1929, they began to lay eggs which soon hatched. The young were separated from the adults on 16th October, 1929. Altogether there were thirty-four of this generation. Throughout the winter and spring this lot have also been kept under glass and fed separately on the following dates:—16th October, 14th November, and 19th December, 1929, and 30th January and 1st April, 1930.

At the time of writing they number fourteen, and vary in size, the largest being about half-grown and the smallest about one-third adult size. Their arrival at maturity, therefore, has been very considerably delayed by the long intervals between the feeds, and in all probability because of the fact that they are inbred. Bugs normally can grow to maturity in about two months, provided their environment and feeding facilities are good. The first generation are again producing their second seasonal crop of eggs, and when these hatch the growth of the young will be observed.

*N.B.*—On examination of the Petrie dish (on 22nd April, 1930) in which the first generation lived, two young living bugs were found. These must have hatched from eggs laid in this dish before 16th October, 1929, the date upon which the adults and young were separated. These two young ones have never been fed, and are therefore surviving on the energy derived from the egg, a remarkable example of the persistence and tenacity of life of this astonishing insect.

*Housing and the Bug.*—The prevention of bug infestation of the new houses in the slum clearance rehousing schemes has been the constant care of this Department, and a very considerable measure of success has been accomplished. When infestation has occurred no great difficulty has been experienced in exterminating the vermin, and cases of reinfestation are comparatively few in number. It is worthy of note with reference to the Calton Improvement Scheme, 1929, that in three of the sub-areas, which comprise 476 houses, 250 of them are bug infested. This affords some idea of the problem which is to be faced in the prevention of the transference of the vermin to the new houses when the day for rehousing the slum tenants arrives. The same conditions have had to be faced in the past, and it is satisfactory that the number of bug-infested houses in the present rehousing schemes is not very much greater than it is.

*Bugs on Ships.*—The problem of extermination of bugs from ships has many points in common with that in the slum-clearance rehousing schemes. For example, in an eastward-going ship recently inspected, it was found that the Lascars' quarters in the poop were very heavily infested with the bed bug. The sleeping accommodation, separated from the ship's side by the width of a passage, was partitioned off by metal stanchions. The bottom of the "bunks" consisted of strong metal straps crossing one another at intervals of about eight inches. Apparently the mattresses with which the lascars furnish themselves are thin and tend to sag into the spaces between these metal straps, which, therefore, press on the bony prominences of the sleepers. To avoid this the Lascars place between their mattresses and the metal structures of the bunk any type of old bed-board which they may find handy, or bring on to the ship. In this particular ship it was found that the source of the infestation of the crew's quarters by bed bugs was these old imported bed-boards, which were extremely



heavily infested with bugs in all stages of development and a multitude of eggs, either hatched or about to hatch.

*Remedy.*—To remedy these conditions all these boards must be removed and no casual wood structures introduced into the sleeping quarters. The quarters should then be fumigated, either with sulphur or “sulphume” (liquified  $\text{SO}_2$ ), which will destroy the living adult bugs and those in various stages of development, but the gas will not affect the contents of the eggs. The eggs will hatch within a week or ten days, when it will be necessary to repeat the fumigation. This repetition of the fumigation is extremely important, because it has been found that gases such as  $\text{SO}_2$ , and probably  $\text{HCN}$ , do not penetrate the protective case of the bug egg. The bug egg is extremely resistant.

If the ship has to proceed to sea at once the onus of the repetition of the fumigation lies with the captain. He should be advised to repeat the fumigation when at sea at regular intervals. Once each fortnight or three weeks would not be an infliction, and it would repay the shipping company. The treatment of the crew's quarters in this fashion would not cost much, and would no doubt add very considerably to the cleanliness of the ship and to its reputation.

Where the woodwork has become heavily infested, it may be necessary to strip this and have it thoroughly scrubbed with soap and water, or with a strong disinfectant, and replaced or even renewed. There can be no doubt that infestation of crew's quarters can be avoided if proper care is exercised, just in the same manner as similar infestation is obviated in the slum-clearance rehousing schemes in the City. Here again we come back to the necessity for constant personal cleanliness and constant supervision of those whose carelessness and neglect furnish the conditions necessary for the propagation of the bug. It is interesting to observe that bug infestation of ships is mostly confined to the crew's quarters. Infestation of first-class passenger and officers' quarters could only mean that supervision of cleanliness was absolutely absent from the ship.

Public Health Department,  
Glasgow, 24th April, 1930.

W. C. GUNN.

#### HOUSING (SCOTLAND) ACT, 1925.

For the purpose of Section 3 of the above Act, 11,040 inspections were made during the year. The details as to inspections, notices issued, and defects found are as follows:—

Division.	Inspections.	Notices Issued.	No. of Defects.	No. of Houses Affected.
Central, ...	2,707	123	503	263
Northern, ...	2,540	214	622	378
Eastern, ...	2,734	190	557	326
South-Eastern, ...	1,563	125	513	314
South-Western, ...	1,496	35	103	53
	11,040	687	2,298	1,334



Following on these inspections, 687 notices calling for repairs were issued, covering 2,298 separate defects in 1,334 houses.

Failure to implement the statutory notices occurred in 77 instances, and in respect of these authority was obtained to remedy the defects complained of, and to charge the owner with the cost of repairs. The actual work of repair was carried out by the Master of Works on behalf of the department, and the following table summarises the cases dealt with according to divisions:—

#### SENT TO MASTER OF WORKS TO EXECUTE REPAIRS.

Division.	Notices Issued.	No. of Defects.	No. of Houses Affected.
Central, ... ..	—	—	—
Northern, ... ..	7	36	24
Eastern, ... ..	8	35	15
South-Eastern, ... ..	6	26	18
South-Western, ... ..	56	117	55
	<u>77</u>	<u>214</u>	<u>112</u>

#### CLOSING ORDERS.

For the purposes of Section 8 of the 1925 Act, 700 inspections were made. The following tables show (1) the position as at 31st December, 1929, of properties dealt with in Closing Orders made in 1928; and (2) the properties in respect of which Closing Orders were made in 1929 and their position as at 31st December:—

#### CLOSING ORDERS MADE IN 1928—POSITION OF PROPERTIES AT 31ST DECEMBER, 1929.

	Number of Houses.				Number of Families.			Remarks.
	Total.	Demolished.	Closed.	Still in Occupation.	Transferred to Rehousing Scheme.	Substituted for transferred Families.	Removed Elsewhere.	
Poplin Street (B.L.) ...	4	4	—	—	—	—	4	
Townmill Road (F.L.), ...	15	15	—	—	14	1	—	
4 Clyde Street (F.L.), ...	22	22	—	—	19	1	2	
4 Parkhouse Lane (F.L.),	22	—	22	—	10	2	3	7 houses unoccupied at time of representation.
43 Ladywell Street, (F.L.)	9	9	—	—	8	—	1	
7 Gallowgate (F.L.), ...	2*	2	—	—	1	1	—	*Converted into business premises.
Gallowgate (B.L.), ...	2	2	—	—	1	1	—	
Gallowgate (B.L.), ...	4	4	—	—	3	1	—	
	<u>80</u>	<u>58</u>	<u>22</u>	<u>—</u>	<u>56</u>	<u>7</u>	<u>10</u>	

CLOSING ORDERS MADE IN 1929—POSITION OF PROPERTIES  
AT 31ST DECEMBER, 1929.

	Number of Houses.				Number of Families.			Remarks.
	Total.	Demolished.	Closed.	Still in Occupation.	Transferred to Rehousing Scheme.	Substituted for transferred Families.	Removed elsewhere.	
3 Claythorn Street, "A" Stair, 2	2	—	2	—	—	—	2	Top-flat houses.
11 Oakbank Street, ... 8	8	—	8	—	6	—	2	Basement houses
15 " " ... 6	6	—	6	—	4	—	2	" "
11 Caithness Street, ... 5	5	—	5	—	4	—	1	" "
15 " " ... 2	2	—	2	—	1	1	—	" "
11 Hopehill Road, ... 2	2	—	1	1	—	—	1	" "
18 " " ... 2	2	—	2	—	1	—	1	" "
45 Braid Street, ... 3	3	—	3	—	2	1	—	" "
5 Coustonhill Street, ... 1	1	—	—	1	—	—	—	" "
962 Tollcross Road (B.L.), ... 4	4	—	—	4	—	—	—	
1 Green Lane, Pollokshaws, ... 1	1	—	—	1	—	—	—	
1422 Maryhill Road, ... 6	6	—	—	6	—	—	—	
48 Millroad Street (B.L.), ... 1	1	—	—	1	—	—	—	
1 Rutherford Lane, ... 10	10	—	—	10	—	—	—	
5 " " ... 8	8	—	—	8	—	—	—	
37 Rolland Street, ... 2	2	—	—	2	—	—	—	Basement houses
41 " " ... 2	2	—	—	2	—	—	—	" "
45 " " ... 2	2	—	—	2	—	—	—	" "
49 " " ... 2	2	—	—	2	—	—	—	" "
200 Garngad Road (1st B.L.), 24	24	—	—	24	—	—	—	
200 " " (2nd B.L.), 6	6	—	—	6	—	—	—	
South Cawdercuilt, Blackhill Rd.5	5	—	4	1	—	—	—	4 unoccupied time of representation.
124 St. James Road (B.L.),... 8	8	—	3	5	—	—	—	3 unoccupied time of representation. Closed after service notice under Section 3.
11, 15, 17 and 19 Lilac Place, 50	50	—	—	50	—	—	—	Closed after service of notice by Master of Works.
197 Centre Street, ... 4	4	—	—	4	—	—	—	Closed under a arrangement with Owners.
	166	—	36	130	18	2	9	

RENT AND MORTGAGE INTEREST RESTRICTIONS  
ACTS, 1920 AND 1923.

*Applications for Certificates by Tenants.*—During the year 13 applications for certificates, in terms of Section 2 (2) of the principal Act, were received, compared with 117 for 1928. Of these, 2 were refused and 11 granted, 9 of the latter being in respect that the houses affected were not in all respects reasonably fit for human habitation, and 2 in respect that the houses were not in a reasonable state of repair. One of the refusals was made on the ground that the house was decontrolled.

The following summary shows the distribution of the applications throughout the several administrative divisions, and gives comparative figures for each year since the Act came into operation:—

GLASGOW, 1929—APPLICATIONS FOR CERTIFICATES UNDER SECTION (2) OF THE INCREASE OF RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1920.

Division.	Refused.	Granted in respect that Houses were	
		(1) Not in all respects reasonably fit for human habitation.	(2) Not in a reasonable state of repair.
Central, ... ..	—	—	—
Northern, ... ..	—	—	2
Eastern, ... ..	—	8	—
South-Eastern, ... ..	1	1	—
South-Western, ... ..	1	—	—
City, ... ..	2	9	2
		<u>11</u>	
1920 (Oct.-Dec.) ... ..	147	263	459
1921, ... ..	97	154	180
1922, ... ..	10	2	8
1923, ... ..	75	180	160
1924, ... ..	21	83	69
1925, ... ..	16	15	28
1926, ... ..	9	28	12
1927, ... ..	9	30	22
1928, ... ..	8	89	20
1929, ... ..	2	9	2

### TENTS, VANS, AND SHEDS.

In last year's report it was recorded that the Corporation, acting as the Local Authority for the City under the Public Health (Scotland) Act, 1897, had been granted in the Glasgow Corporation Order Confirmation Act, 1929, additional powers to enable them to control sites used for the accommodation of tents, vans, and sheds and similar structures, as well as for the registration of the structures or habitations themselves. During the course of the year circular letters directing attention of all persons letting ground for the accommodation of vans, &c., were issued and a considerable amount of work done in connection with the inspection of the areas and applications received for permission to use sites. It was not, however, until after 31st December, 1929, that any applications were formally submitted to the Committee on Health, and information in regard to these is accordingly delayed until next year.

Draft bye-laws under Section 33 of the Order have also been submitted to the Department of Health, but, at the moment of writing, still await confirmation.

## SECTION XI.

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### BACTERIOLOGICAL LABORATORY.

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REPORT BY DR. R. M. BUCHANAN, City Bacteriologist.

This outline and summary of the work of the laboratory in 1929 gives continued evidence of the extensive use that is made of the activities of the laboratory for the purpose of deriving assistance in the elucidation of the causes of disease. It is illustrative of a wide range in the nature of the materials dealt with, while the volume of the work continues to be large. The demands made upon the resources of the laboratory approximate in number to those of immediately preceding years, and it has been a principal aim to meet those demands by the application of the most approved methods of examination. As a consequence of the extensive work that is being carried out by research workers in bacteriological science, and of the important results bearing upon public health following therefrom, it is realised more and more that the scope of methods of diagnosis is being enlarged, and that therefore the work entailed in many investigations is necessarily increased in accordance with increasing knowledge of what the problems involve.

The specimens submitted for examination during the year numbered 33,934, and comprised materials from suspected cases of infectious and other diseases, samples of the water and the milk supplies, and samples of foodstuffs. The details are set out as follows.

#### DIPHTHERIA.

The sources from which the laboratory receives specimens to be examined for the presence of the diphtheria bacillus are, for the most part, of three kinds:—(1) persons who, it is suspected, may be suffering from diphtheria; (2) persons who have been in contact with or in the vicinity of a known case of the disease, and (3) children who, prior to being admitted to the Corporation Country Homes, have their throats examined as a precaution against their introducing the infecting organism into the homes. The total number of swabs from these three sources in the year 1929 was 8,311. It is to be noted that, as a working procedure, little or no reliance is placed upon a direct and simple examination of these swabs by means of the microscope. The procedure adopted is first of all to obtain a culture of the organisms from each swab, and then to examine the growth by the microscope. The total, 8,311, is distributable under the above three sources as follows.

(1) *Suspected Cases*.—During the year 7,223 swabs were examined and reported upon in respect of diphtheria. In 1,074, or 14·8 per cent., the result was positive. The number of swabs received in 1928 was considerably higher, viz., 8,386. This increase is referable to the first four months of 1928, particularly January, in which months the large number of 3,187 swabs were received from medical practitioners with a positive percentage of 20·7. There was no similar rush in 1929.

It is of interest to note, as was done last year, the situations of the lesions with regard to which a diagnosis was required. These were:—Pharynx, 6,061; pharynx and nose, 842; pharynx and larynx, 171; nose, 91; larynx, 53; conjunctiva, 2; ear, 2; vagina, 1; total, 7,223.

(2) *Contacts*.—The number of contacts examined has undergone a great diminution in recent years, from 2,790 in 1927, then 1,454 in 1928, and now 589 in 1929. These numbers are largely relative to the number of large institutions, such as schools and hospitals, that may happen to be concerned, but they also appear to bear a relation to an actual decrease in the number of suspected cases of the disease.

The sources of the material from contacts were as follows:—

	Swabs.	Positive.	Per cent. Positive.
120 households, ... ..	260	17	6·5
1 school, ... ..	44	3	6·8
1 hospital, ... ..	93	3	3·2
1 children's home, ... ..	135	4	3·0
1 day nursery, ... ..	29	1	4·5
1 military barracks, ... ..	22	—	—
2 reception houses, ... ..	6	—	—
	<hr/> 589	<hr/> 28	<hr/> 4·7

Thus of the 589 specimens examined 28, or 4·7 per cent., were found to yield the diphtheria bacillus.

(3) *Pre-admission Examinations*.—499 children were examined in this connection, and 17, or 3·4 per cent., were reported as harbouring the bacillus of diphtheria. The percentage in 1928 was 2 among 504 examined.

*Virulence Tests*.—These are biological tests which it is found necessary to apply to the organism occurring in certain suspected cases, in convalescents, carriers and contacts. They are always performed in cases where a diphtheria-like organism occurs in a situation other than the throat. There were 65 such tests done in 1929, the organism proving virulent in 23, or 35 per cent. Nine of these virulent organisms were found among 28 cases of suspected nasal diphtheria, while the organisms noted above as occurring in the conjunctiva, ear, and vagina were non-virulent.



## ENTERICA GROUP.

During the year agglutination tests for the diagnosis of typhoid and paratyphoid fever were done with 230 specimens of blood serum from 220 patients. Positive results for typhoid were given in 22 cases, and for paratyphoid B in 12 cases. The capillary tube continues to be largely used by practitioners in the submission of these specimens, there being 83 of these. Out of 17 indefinite reactions with the capillary tube, four were found positive for paratyphoid B when the tests were repeated with blood in bulk (2-5 c.c.). The capillary tube admits only of a test for the typhoid reaction; the submission of specimens in some quantity is therefore strongly to be recommended. When the result is indefinite by the macroscopic method, the cause is usually to be found in such factors as previous anti-enterica inoculation, lysed blood or unsuitable period in the course of the disease.

The examination of urine and fæces for the presence of organisms of this group entailed the investigation of 449 specimens from suspected cases and contacts. Twenty-five specimens yielded the typhoid bacillus, and 24 the paratyphoid bacillus (B). Urines yielded ten of the former and six of the latter organisms, while the numbers from fæces were 15 *B. typhosus* and 18 *B. paratyphosus* B.

## DYSENTERY AND FOOD POISONING.

Specimens of fæcal excreta are not infrequently submitted to be examined for "dysentery and enteric group" infections. Where these have been proved negative for the enteric group they have been placed under the above heading owing to the fact that an examination for dysentery organisms entails microscopic work in addition to examination by culture. The total number of these specimens in 1929 was 561. Practitioners of the city submitted 61, and of these 10 yielded the dysentery bacillus of Flexner and six Sonne's dysentery bacillus. Three hundred and thirty specimens were examined for the Health Department, the swollen number being accounted for by the Govan outbreak of Flexner dysentery in the late summer and autumn. Positive results were obtained from 40 of these. The Corporation hospitals submitted 170 specimens, a number again related to the Govan outbreak. The totals with the results obtained may be put in tabular form, the specimens from Govan being set out separately.

	Total.	B. Flexner.	B. Sonne.	E. histolytica.
Practitioners, ...	61	10	6	—
M.O.H., ...	103	13	1	4
Govan outbreak, ...	227	22	—	—
Corporation hospitals,	170	25	5	—
	<u>561</u>	<u>70</u>	<u>12</u>	<u>4</u>

An outbreak of dysentery entails the examination of a large number of contacts, and the repeated examination of patients before they are cleared, hence the number of examinations is high relatively

to the number of positive findings. It is no unusual thing in an outbreak of this kind to find, as was found among the Govan cases, contacts who were actually infected with the causative organism without themselves showing signs of the disease. As regards the possible source of the outbreak there were examined in the laboratory a sample of soil near a leak in a drain, other samples of soil and waste water from a choked trap in a court used by children as a playing ground. Samples of ice cream supplied to the district and the ice cream vendors and makers were examined. None of these investigations led to the detection of the source of the organism. It appeared that the milk supply could be definitely excluded. Some of the clinical aspects of these cases as seen in hospital are described in the *Glasgow Medical Journal* of February, 1929.

The cases of dysentery caused by the Sonne bacillus appeared both in so-called residential and in working-class districts. A feature of them was the manner in which whole families of four to six might be affected, while nothing could be gathered as to any neighbour or relative or other place in the city that could be associated with the cases. In at least half of these cases the identification of the organisms presented a difficulty with which we are becoming fairly familiar, viz., that they may not answer to serological tests till some period after they are isolated. In no case, however, did this prove a cause of delay in administrative action.

There were few complaints regarding foodstuffs during this year. Such materials are examined either to assist in determining their fitness for consumption or because of their connection with cases of illness. In 1929 they included articles such as smoked ham, haggis, tinned meat, green peas, tinned salmon, cheese, shell-fish (mussels) and pork. The most interesting findings concerned the mussels and the pork. The mussels were part of a consignment from the Irish Free State. They were found to be from beds contaminated with sewage, and from one of six examined there was cultivated the organism of paratyphoid fever (*Bacillus paratyphosus B*, Schottmüller). The sample of pork was alleged to have caused the illness of a man who had eaten a portion of it. This sample had been sold out of a barrel of assorted pieces of pork imported from the Irish Free State. A food poisoning bacillus of the *Salmonella* group was found in the excreta of the patient, and the same organism was cultivated from the pork. The precise type of *Salmonella* was not determined, but it was not the type most commonly found (*æritrycke* type), nor was it *B. paratyphosus B*. The patient, though severely attacked, recovered.

## VENEREAL DISEASES.

*Wassermann Test*.—The method of performing the Wassermann test in this laboratory, which is Method No. 1 of the Medical Research Committee's Report, continues to give satisfactory results both as regards accuracy and delicacy. The number of specimens subjected

to the test during the year, viz., 11,703, is a clear indication of the importance and value that are attached to it. This total represents an increase of 474 specimens over the number in 1928.

Of these 11,703 specimens, 11,601 were samples of blood and 102 were cerebro-spinal fluids. 4,290 were duplicate specimens from patients under treatment.

The sources of the specimens were as follows:—

1,594 were received from City Practitioners.

4,530 were received from Institutions.

4,585 were received from Public Health Department.

994 were received from Local Authorities under special arrangement.

The percentage positive rate for specimens sent in for diagnosis was 19·2, while that for specimens from cases undergoing treatment was 46·0. The corresponding percentages for the year 1928 were 18·6 and 52·8, the total number of examinations being 11,229. In the year under review there were 78 specimens of blood which could not be reported upon owing to technical difficulties connected with hæmolysis (37), anti-complementary action (4), and insufficient serum (37).

From patients sent to the laboratory, 12 specimens of blood were taken for the test—for practitioners (10), for Health Department (1), and for an outside authority (1).

The Report of the Second Laboratory Conference on the Serodiagnosis of Syphilis, held at Copenhagen in the summer of 1928, under the League of Nations Health Committee, gives 14 varieties of serological tests for syphilis. In comparison with other flocculation tests of international repute, such as Sachs-Georgi, Segina, Meinicke, Vernes and Muller, the Kahn test maintains its position as a good method for the diagnosis of syphilis as regards sensitiveness, specificity and practicability. From experience gained in this laboratory in 1928, it was decided in September, 1929, to institute the Kahn test for the serological examination of routine sera from patients attending the dispensaries at Black Street, Broomielaw and Bellahouston for the treatment of gonorrhœa only, as well as from persons attending the Antenatal Clinics and the Clinic for the Blind.

During the last four months of the year 1,080 such specimens were subjected to the Kahn test. Six hundred and twelve of these were antenatal specimens with positive percentage of 3·3, 476 were gonorrhœas with 4·2 per cent. positive, and 92 were blind persons with 12·5 per cent. positive.

Notwithstanding the increase in the number of specimens of blood-serum, the comparison of the Kahn and Wassermann reactions carried out by Dr. John Wyllie in 1928 was continued in 1929. The following

are the results of this comparison on 659 sera taken at random from cases of treated and untreated syphilis and non-syphilitic cases:—

*Groups in which agreement occurred.*

1. Kahn positive, with Wassermann reaction positive, ...	222
2. Kahn negative, „ „ „ negative, ...	366
3. Kahn doubtful, „ „ „ weak or doubtful, ...	31
	<hr/> 619 <hr/>

*Groups in which disagreement occurred.*

(a) Complete disagreement.	
1. Kahn positive, with Wassermann reaction negative, ...	3
2. Kahn negative, „ „ „ positive, ...	3
(b) Slight disagreement.	
3. Kahn positive with Wassermann reaction weak or doubtful, ...	11
4. Kahn doubtful, „ „ „ negative, ...	10
5. Kahn „ „ „ positive, ...	5
6. Kahn negative, „ „ „ weak or doubtful, ...	8
	<hr/> 40 <hr/>

The results indicate complete agreement between the two tests in 619 cases, equal to 93·9 per cent., while disagreement was (a) complete in six cases, equal to 0·9 per cent., and (b) slight in 34 cases, equal to 5·15 per cent.

*Microscopical Examination for Spirochaeta pallida.*—Examinations were made of 25 specimens for the presence of the organism of syphilis which was found in three of them.

*Microscopical Examination for Gonococcus.*—Specimens, other than ophthalmia neonatorum, to the number of 1,533, were examined for the gonococcus. These were submitted from City Practitioners (658), Institutions (88), Public Health Department (776), and other Local Authorities (11). The specimens for diagnosis gave a positive percentage of 24·5, while those from patients undergoing treatment gave a corresponding figure of 18·6.

## OPHTHALMIA NEONATORUM.

Specimens submitted under this category numbered 706, and gave the following results:—

Specimens from	Number.	Positive.
Medical Practitioners, ... ..	12	2
Medical Officer of Health, ... ..	694	53

The positive results have reference to the presence of the gonococcus. The figures do not indicate the actual numbers of patients treated, since, in many cases, repeated examinations have to be made in testing the results of treatment. In 1928 the number of examinations made was 799, the positive percentage being 12·6, as against 7·8 in 1929.



## ANTHRAX.

After an interval following on the somewhat intensive work in the year 1928 upon goatskin thongs as vehicles of the anthrax bacillus, there was a resumption of these examinations in the last quarter of 1929. Those thongs are used as binding for orange boxes, and 36 samples were tested. They were placed in groups of three or four for each test, those having the same source being placed together. In this way 10 biological tests were carried out. In two of these the bacillus of anthrax was found. One of these "positives" was from a source which has continually furnished anthracic thongs since the very start of the examination of this material.

In April four samples of salted hides were examined, the results being negative. There has been no occasion this year to deal with any shaving brushes.

A case of suspected anthrax in man was dealt with in the laboratory and negatived after examination of exudate taken from a cutaneous sore.

## PLAGUE.

Since this disease is acquired from the bite of a rat flea which has previously fed on a plague-infected rat, laboratory examinations of rats from ships and from the harbour for evidence of plague are constantly carried on. During the year 464 rats were so examined, with negative results. Of this number 84 were *Mus decumanus*, 175 *Mus rattus*, and 205 *Mus alexandrinus*. The female rat was slightly less in number than the male, the former numbering 218, the latter 246.

## INFECTIVE JAUNDICE (WEIL'S DISEASE).

This disease may be transmitted by rats infected by the micro-organism known as *Leptospira icterohaemorrhagiae*, an organism of spiral form. From the work done in the laboratory since 1924, with a view to the detection of this organism in rats, it is becoming clear that its occurrence in rats found in the Glasgow area is not common. It was not present among the 464 rats examined in 1929, nor was any case of infective jaundice in man encountered.

## CEREBRO-SPINAL MENINGITIS.

This disease assumed an epidemic form in the first half of the year 1929. Several of the cases were fulminant in type, and of those that came to autopsy the following were the principal features observed:—Purpuric spots on the general body surface, punctiform hæmorrhages on the surface of the lungs and on the surface of the kidneys, hæmorrhage in the suprarenal capsules or marked congestion of these organs and marked hyperæmia of the surface vessels of the brain with, in some cases, accumulations of opaque fluid in the deeper sulci.



*Typing of the Meningococci found.*—From cerebro-spinal fluids obtained by lumbar puncture and from other sources, 20 strains of the meningococcus were cultivated, and 13 of these were investigated with regard to type. Cultures of the four types were obtained from Professor Ledingham, Lister Institute, London, and antisera prepared from these in this laboratory according to Murray's technique (Med. Res. Council, Spec. Rep. Ser., No. 124). The titres of the sera were 800, 400, 400 and 1600 for Types I, II, III and IV respectively. The agglutinating suspensions were prepared and standardised according to the details given in the Medical Research Council's Special Report, Series No. 50. The results of the 13 tests were that 10 strains reacted to Type I serum, one to Type II serum, and two equally to Type II and Type III sera. Of those giving the Type I reactions, five agglutinated at half to full titre of the serum, and five in dilutions of 200 to 100. The remaining three organisms agglutinated in dilutions of 200 of their sera.

*Nasopharyngeal Examinations.*—One hundred and twenty-seven contacts from 34 families were bacteriologically examined. In eight of these the meningococcus was found. Many of the contacts visited the laboratory for this examination. In three of these positive contacts the organism was found on more than one occasion, and one of these cases was subsequently segregated in Belvidere hospital with a mild febrile illness.

### INFLUENZAL PNEUMONIA.

During the outbreak of this disease early in 1929 work was carried out in the laboratory to ascertain what were the principal infecting organisms in typical cases, there being in view the preparation of vaccine for use in treatment and in prophylaxis if the course of the outbreak should seem to render the use of vaccine desirable. The examination of sputa from hospital patients showed that their condition was very properly described as influenzal pneumonia. Broadly speaking, the sputum of the typical case contained large numbers of *pneumococcus* (the common organism of pneumonia) and of *Bacillus influenzae*, these organisms appearing on culture in approximately equal numbers. Other organisms, e.g., *streptococcus*, were negligible. A brief reference to the correlation between the clinical diagnoses and the bacteriological results is of interest. (1) The great majority of hospital cases considered to be influenzal pneumonia were confirmed as such bacteriologically, the influenza bacillus and the pneumococcus appearing in profusion in the cultures and also on direct microscopical examination. There were a few, however, with this diagnosis which failed to show the presence of either of these organisms. One case of "influenzal pneumonia with marked consolidation" gave an interesting confirmatory result, viz., influenza bacillus doubtful microscopically, but culturally positive, while pneumococci were numerous by both methods. (2) Among the few specimens from cases diagnosed as lobar pneumonia, there was one which, besides containing the pneumococcus in large number, furnished a larger number of *Bacillus influenzae* than any

other specimen that came under examination. There was probably in this case an extensive lobular consolidation. No influenza bacilli were found in the other lobar pneumonias. These findings are indicative of the advantage that is gained when the clinical and the bacteriological services are conjoined as far as possible in an outbreak of this kind.

Vaccine was prepared in bulk in the laboratory, but, as the epidemic showed signs of becoming delimited, there appeared to be no call to resort to its distribution.

## MILK SUPPLY.

### I.—IN RELATION TO BOVINE TUBERCULOSIS.

All these samples involve examination by microscopical and biological methods.

1. *Milk from Town Cows*.—These were received from the Veterinary Surgeon and numbered 185. The tubercle bacillus was found in seven samples, one being a duplicate.

2. *City Milk Supply*.—These specimens were taken at railway stations and at consignees' premises. Two hundred and eight samples were examined in 1929.

Samples.	Tuberculous.	% Tuberculous.
208	7	3.3

3. *Hospital Milk Supply*.—These samples are from the sources of supply of the City hospitals. Three hundred and fifty-three samples were examined during the year, but none was tuberculous.

4. *Other Local Authorities*.—From these sources 100 samples were received and four were found tuberculous.

Samples.	Tuberculous.	% Tuberculous.
100	4	4

5. *Medical Practitioners*.—Two specimens submitted for examination gave negative results.

6. *Acid-fast Bacilli in Milk*.—These organisms were observed in nine specimens, and were found by biological tests not to be tubercle bacilli.

### II.—IN RELATION TO BACTERIAL CONTENT.

*City Milks*.—Milks coming into the City are examined for their bacterial content, the samples being taken at the railway and road transport stations. During the year 206 samples were estimated in this way, as against 201 in the previous year. The results obtained in 1929 and the previous year may be placed together for comparison, as follows:—

	Number examined.	Samples below maximum of Certified Milk (30,000 per c.c.)	Samples below maximum of Grade A Milk (200,000 per c.c.)	Samples above 200,000 per c.c.
1928, ...	201	89 (44%)	65 (32%)	47 (23%)
1929, ...	206	87 (42%)	71 (35%)	48 (23%)

The actual averages of bacterial counts of samples of City Milks in 1929 are presented in the following table as indicating degrees of purity of production.

Total number of samples examined—206.

Maximum counts at 37° C. for designated milks (used as a basis of comparison).		Average counts at 37° C. and number of samples involved.	
Below 30,000 per c.c. (Certified), ...	12,500	per c.c. for 87 samples=42%	
Below 200,000 per c.c. (Grade A), ...	75,100	per c.c. for 71 samples=35%	
	303,500	per c.c. for 25 samples=12%	
Above 200,000 per c.c., ...	798,300	" 6 " = 3%	
	2,936,600	" 17 " = 8%	

It will be observed from the above comparative table of the years 1928 and 1929 how closely similar these years are as regards the categories into which the City milk supplies are found to fall. In either year when a milk gives a count that is within the Certified or Grade A maximum it is well within these limits. And again when the count exceeds that of Grade A the indications are that it tends to go far beyond it. The supply of this last type of milk is constant enough to furnish exactly the same percentage of the total supply examined in the years 1928 and 1929, viz., 23 per cent., the actual counts of this type clearly indicating that the conditions of its production admit of much improvement.

*Hospital Milk.*—The City Hospitals are supplied with milk designated as Grade A (T.T.). Estimations of the bacterial content are made fortnightly in the laboratory, and the following are the average bacterial counts for 1929:—

Hospital No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
169,907	96,100	77,072	66,295	48,849

These figures are seen to fall well within the 200,000 mark allowed for milk of the grade supplied.

*Designated Milk.*—During the year 262 samples of designated milks were examined for the Health Department. Of these 250 were within the maximum count allowed, while 12 exceeded it. The details are subjoined.

Samples.		Within Maximum count.	Over Maximum count.
Certified Milk, ...	65	65	—
Grade A Pasteurised, ...	19	19	—
Pasteurised, ...	22	22	—
Grade A, ...	12	12	—
Grade A (T.T.), ...	144	132	12
262		250 (96%)	12 (4%)
1928, ...	256	249 (97%)	7 (3%)

#### LOCH KATRINE WATER SUPPLY.

The water supply as sampled from the tap has continued to be examined twice a month for the purpose of detecting possible undue contamination. There has been no noteworthy departure from the

normal during 1929. The average bacterial content as estimated by gelatin plate culture began to increase in June, and continued for the rest of the year at a higher level than was observed for any month prior to June. The highest average count by agar plate culture, 11 organisms per c.c., was found in November.

### MICROSCOPICAL EXAMINATION OF TISSUES.

Specimens of tissue submitted for diagnosis by microscopical examination numbered 25. The majority of these were from suspected cases of tumour formation (11) and of tuberculosis (8), the others being for the presence of organisms. They were received from the City Hospitals, from general practitioners, and from other Local Authorities.

### INSECT PESTS FROM DWELLING HOUSES.

Specimens of insect pests, exclusive of vermin, are submitted for identification from time to time, both on account of the damage done to woodwork and foodstuffs by certain species and because of the disagreeable circumstances associated with the infestation of even harmless species. The specimens, nine in number, were fewer than in previous years, and included samples of the wood-boring beetle, garden wood lice, the cockroach, and furniture mites.

### SUMMARY OF EXAMINATIONS FOR THE YEAR 1929.

The examinations performed in the Bacteriological Laboratory during 1929 numbered 33,934, as compared with 33,626 in the previous year. The sources of the materials submitted were as follows:—

	Medical Practitioners.	Health Department.	Other Local Authorities.
<b>Tuberculosis (Human)—</b>			
Microscopical Examination—			
Sputum, ....	2,574	1,559	93
Urine, ....	71	39	3
Cerebro-spinal fluid, ....	5	2	9
Pleural effusion, ....	12	8	2
Pus, ....	13	26	—
Faeces, ....	2	—	—
Post-mortem specimens, 3; discharge, 1; mesenteric fat, 2, ....	3	2	1
Biological Test, ....	120	62	15
<b>Tuberculosis (Bovine)—</b>			
Milk—			
Microscopical Examinations, ....	2	746	96
Biological Test—			
Town cows, ....	—	185	—
City milk—Station samples, ....	—	208	—
Samples from Hospital milk supply, ....	—	353	—
Miscellaneous sources, ....	2	—	100
<b>Typhoid and Paratyphoid Fever—</b>			
Blood (agglutination), ....	170	43	17
Urine, faeces (cultures), ....	76	343	30

	Medical Practitioners.	Health Department.	Other Local Authorities.
<b>Dysentery—</b>			
Faeces, ....	54	539	2
Urine, ....	1	6	—
Blood, ....	1	2	1
Sputum, 2; milk, 2; water, 2; ice cream, 2; butter, 1, ....	1	8	—
<b>Diphtheria—</b>			
Throat swabs from suspected cases, ....	6,765	303	155
"    "    contacts, ....	—	589	—
Virulence Tests, ....	30	10	25
Pre-admission swabs, ....	—	499	—
<b>Vincent's Angina—</b>			
Throat swabs from suspected cases, ....	39	2	1
<b>Cerebro-spinal Fever—</b>			
Post-nasal swabs, ....	1	158	—
Cerebro-spinal fluid, ....	5	1	6
Blood, ....	—	1	—
Globulin, ....	—	1	—
<b>Scarlet Fever—</b>			
Cultural Tests for hæmolytic streptococci, ....	16	255	2
<b>Ophthalmia Neonatorum, ....</b>	12	694	—
<b>Venereal Diseases—</b>			
Wassermann Test, ....	6,124	4,585	994
Kahn Test—Ante-natal, &c., ....	—	1,080	—
Gonococcal infections other than ophthal- mia neonatorum, ....	746	776	11
Spirochaeta pallida, ....	25	—	—
<b>Anthrax—</b>			
Goatskin bindings of orange boxes, ....	—	24	—
Salted hides, ....	—	4	—
Swab from pustule, ....	1	—	—
<b>Plague—</b>			
Examination of rats from ships, docks, and City, ....	—	464	—
<b>Infective Jaundice—</b>			
Examination of rats from various sources in the City, ....	—	464	—
<b>Malaria—</b>			
Blood, ....	7	2	—
<b>Bacterial Diagnosis (various Diseases)—</b>			
Urine, 30; pus, 11; faeces, 25; mis- cellaneous, 51, ....	68	46	3
<b>Food Poisoning—</b>			
Examination of food-stuffs, 10; materials from patients, 22, ....	—	31	1
<b>Water—</b>			
Bacterial content, ....	—	5	11



	Medical Practitioners.	Health Department.	Other Loca. Authorities.
<b>Milk (Bacterial Content)—</b>			
Under Milk (Special Designations)			
Order, ....	7	262	18
City milk supply, ....	—	206	—
Hospital milk supply, ....	—	347	—
Miscellaneous, ....	—	35	—
<b>Blood—</b>			
Blood count, ....	7	56	—
Cytological examination by smears, ....	—	1	—
Bacterial content by culture, ....	2	7	—
Pernicious anæmia, ....	6	1	—
<b>Influenzal Pneumonia—</b>			
Sputum, 21 ; swab, 2, ....	1	22	—
<b>Histological Examination—</b>			
Equine tissue (Grass sickness), ....	—	—	2
Tumours and tissues for malignancy, ....	3	7	1
Tissue for <i>S. pallida</i> , ....	1	—	—
Tissue for <i>B. tuberculosis</i> , ....	2	4	2
Tissue for organisms, ....	—	4	—
<b>Fungoid Diseases—</b>			
Ringworm, ....	—	5	—
<b>Chemical Examination—</b>			
Urine, 24 ; faeces, 1, ....	6	19	—
<b>Preparation of Vaccines,</b> ....	4	—	—
<b>Parasites—</b>			
Scabies, ....	—	7	—
<b>Leishmaniasis,</b> ....	1	—	—
<b>Typhus—</b>			
Serum Test (Weil-Felix), ....	—	4	—
<b>Insect Pests from Dwelling-houses and Warehouses,</b> ....	—	9	—
	16,986	15,121	1,601
	33,708		
<b>Water Department—</b>			
Tap water, ....		38	
Reservoirs, ....		48	
		—	86
<b>Baths Department—</b>			
Water from swimming ponds, ....		140	
		33,934	

R. M. BUCHANAN

## SECTION XII.

## PART I.

## FOOD POISONING.

Instances of illness suggestive of food poisoning continue to be brought to the notice of the Department for special investigation, and in the following notes a summary of the more important cases is given.

The Maryhill police notified the Department of the illness of a young infant of three weeks after eating what purported to be a mixture of borax and honey. The remainder of this mixture, on analysis, proved to be turpentine and resin. The chemist who supplied it was instructed to withdraw the remainder of the stock and to take up the matter with the manufacturers.

Three members of a household in the South-East Division were taken ill after partaking of salmon sandwiches, and were removed to the Royal Infirmary, where one of the patients died. The *post-mortem* findings were indefinite, but one of the *Salmonella* group of food-poisoning organisms was found. As this case came to the notice of the Department quite accidentally seven days after the occurrence, it was impossible to ascertain the brand of salmon in question. Samples of four different brands were obtained from the shop supplying the original tin, and were examined in the Bacteriological Laboratory with entirely negative result. No other illnesses were heard of, and it would appear that this case was one of infection by the *Salmonella* group in an isolated tin.

The County Authorities reported that 90 to 95 per cent. of the persons who had dinner at the communal kitchen at engine works in Ayrshire, on 17th October, were afterwards taken ill with symptoms suggestive of food poisoning. Glasgow workmen, seven in all, who formed a part of a squad engaged on repairs at the engine works, and who dined in the kitchen, were notified here by the County Medical Officer of Health, and were followed up, but in no instance did the bacteriological examination of specimens obtained, reveal the presence of any food poisoning organism.

*Gastro-Enteritis—Due to Coal Tar Products in Aerated Waters.*—Instances of this kind are brought to notice from time to time, when cases of slight illness, due to the contamination of aerated waters by disinfectant occur. It would appear that the rubber ring of the screw stopper is the origin of the trouble. This ring absorbs a small amount of the disinfectant and a little of the coal tar product is squeezed into the bottle when the stopper is screwed down again. The manufacturers recognise this and are adopting the metal cap, which will reduce in future the number of complaints due to this cause.

**SUMMARY OF OPERATIONS UNDER THE FOOD AND DRUGS (ADULTERATION) ACT, THE MILK AND DAIRIES (SCOTLAND) ACT, THE MERCHANDISE MARKS ACTS, AND ALLIED ACTS AND ORDERS.**

*The Food and Drugs (Adulteration) Act.*—In terms of this Act a total of 5,211 samples was procured and examined, 3,875 being informal and 1,336 formal or statutory samples. Of these 154 and 71 respectively were subsequently certified as non-genuine. Proceedings were instituted in connection with 57 of the formal or statutory samples returned as non-genuine, and in addition there were seven prosecutions for infringements of the provisions of the Act in relation to dealing in margarine.

The total fines and expenses imposed under the above act amounted to £246 19s. 6d.

Further details of operations are contained in the subjoined observations, abstracts, tables and appendices.

**ABSTRACT OF TOTAL SAMPLES EXAMINED DURING 1929.**

Article.	Informal.		Statutory.		Percentage adulterated.		Percentage of samples taken in each group to total.	
	Taken.	Non-Gen.	Taken.	Non-Gen.	Infor.	Stat.	Infor.	Stat.
Milk and cream, ...	2,303	84	861	22	3·6	2·6	59·4	64·5
Milk products (Butter, cheese, &c.), ...	604	8	106	6	1·3	5·7	15·6	7·9
Cereals, &c., ...	27	—	32	—	—	—	0·7	2·4
Spirituous liquors, ...	218	12	25	—	5·5	—	5·6	1·9
Drugs, ...	220	6	38	—	2·7	—	5·7	2·8
Flavourings and condiments, ...	74	6	60	2	8·1	3·3	1·9	4·5
Miscellaneous foods, &c., ...	429	38	214	41	8·9	19·2	11·1	16·0
Totals, ...	3,875	154	1,336	71	4·0	5·3	100·0	100·0

**ABSTRACT OF INFORMAL AND STATUTORY SAMPLES OF SWEET MILK EXAMINED DURING 1929.**

Informal.				Month.	Statutory.			
No. taken.	No. pre- sumed Non- Gen.	Average percentage composition.			No. taken.	No. pre- sumed Non- Gen.	Average percentage composition.	
		Fat. %	Non- Fat. %				Fat. %	Non- Fat. %
174	7	3·57	8·79	January, ...	75	6	3·58	8·73
199	15	3·50	8·81	February, ...	76	2	3·55	8·72
188	6	3·58	8·78	March, ...	72	3	3·53	8·72
198	5	3·47	8·78	April, ...	72	2	3·42	8·70
220	12	3·50	8·76	May, ...	84	1	3·53	8·73
194	7	3·46	8·87	June, ...	73	1	3·47	8·83
157	5	3·49	8·79	July, ...	60	1	3·61	8·74
200	10	3·52	8·63	August, ...	59	1	3·58	8·59
178	3	3·68	8·73	September, ...	67	1	3·66	8·69
173	3	3·82	8·82	October, ...	62	1	3·80	8·63
138	3	3·71	8·69	November, ...	66	—	3·68	8·69
215	6	3·63	8·73	December, ...	71	2	3·51	8·94

*Artificial Cream Act, 1929.*—This Act was originally introduced as the Reconstituted Cream Bill, and was a compromise on the Bill of 1928, the prefix “synthetic” in the latter being dropped. Subsequently, by a House of Lords’ amendment, the Bill was re-titled, and became law as the Artificial Cream Act to function as from 1st June, 1929. The inclusion of the word “cream” in the designation of any substance for human consumption is now restricted to such as purport to be either natural cream or “artificial cream” as defined. The latter is defined as “an article of food resembling cream and containing no ingredient which is not derived from milk, except water, or any ingredient or material which by virtue of the proviso to subsection (2) of section 2 of the Food and Drugs (Adulteration) Act, 1928, may lawfully be contained in any article sold as cream.”

Its main provisions further enact:—(1) That the commodity shall not be manufactured, sold, or exposed or kept for sale, except on premises registered with the Food and Drugs Authority, unless (a) where made by any person solely for his domestic purposes; (b) made on any premises for use, in the preparation thereon of some other article of food; or (c) solely dealt in by its receipt and sale in closed receptacles. (2) That every receptacle in which the commodity is conveyed or exposed for sale shall have “artificial cream” printed in large and legible type either on the receptacle or on label attached.

In the course of the passage of the Bill, the following amendments were proposed and submitted by the Local Authority to the Ministry, but these proved unacceptable:—(1) That when exposed for sale by retail the designation should be clearly visible to the purchaser; (2) that the prefix should be in letters not smaller than, and in the same colour as, the word “cream,” and not obscured by other matter on receptacle or label; and (3) that where a receptacle containing artificial cream is exposed or offered for sale in a paper or other wrapper the latter should likewise bear the statutory designation.

The commodity is prepared from an admixture of water, dried milk and fresh butter, with subsequent treatment in an emulsifier. It has been used largely as a substitute for cream, or to eke out depleted supplies of the latter, and it has been sold mainly to bakers and confectioners because of its convenience and better keeping qualities compared with ordinary cream. Many bakers and confectioners have installed emulsifiers at considerable cost. In the manufacture of their comestibles a more extensive use was, however, made of synthetic cream, in which the fat was derived otherwise than from milk. This commodity was sold under various proprietary names in which the word “cream” invariably formed a part. This will, of course, not now be permissible in terms of section 1, subsection (1) of the Act, and steps have been taken to acquaint all known manufacturers or traders. “Confectionery filling” is now the usual designation adopted.

*Adulterated Polish Butter.*—In the early days of the year several test samples of butter gave unusual analytical results, indicative of admixture with foreign fat. It was subsequently learned that at that period a shipment of Polish butter which arrived in London had subsequent to its release, been found to contain foreign fat, and there was every reason to believe that the unsatisfactory test samples referred to were part of this consignment.

The analyses of samples taken by the officers of Customs and Excise at London from two subsequent shipments (amounting in all to about 2,500 casks) likewise disclosed the presence of foreign fat, and an embargo was placed upon their distribution for other than baking purposes. Examination of a sample cask which was forwarded to a city firm of produce merchants—part of proposed lot of 600 casks to be brought on to Glasgow for sale to bakers—showed the presence of 53 per cent. of foreign fat. As the proposal was looked upon departmentally as an unsafe and unsatisfactory one and liable to abuse, the proposed deal was not concluded, and a market was found by the firm in London. The matter was taken up by the Polish Legation in London, and it is believed to have been traced to a factory in Warsaw, where butter as received from farmers was admixed with margarine before being packed and exported. Poland is one of the few countries where the export of butter is not under Government control, but there is every reason to believe that the action taken will preclude any suspicion hereafter attaching to Polish butter.

*Adulterated Pepper.*—Hitherto pepper has been remarkably free from adulteration. Owing, however, to the exceptional prices prevailing for this commodity during the earlier part of the year, it was suspected that considerable quantities of rice starch were being admixed with it. So far as sales direct to the consuming public obtained, it was found that, with one or two exceptions, these were so labelled as to conform to the provisions of the Food and Drugs (Adulteration) Act, relating to the sale of admixtures.

Further enquiries, however, elicited that sales of such admixtures as “pepper” made by certain brokers and dealers were reaching sources hitherto unsuspected, *i.e.*, butchers, for use with other seasonings. Informal samples obtained afforded full corroboration, the analyses disclosing the presence of from forty to over fifty per cent. of rice starch. Endeavours were made to obtain official samples in course of delivery to such traders, but the proviso in the statute formed a stumbling block, *viz.*, that this may only be done (in relation to other than milk) upon the request or with the consent of the purchaser. As the latter, with one exception, could not be obtained owing to fear of victimisation, further action in this direction proved somewhat abortive. The brokers or dealers were, however, communicated with in each instance, and assurances were given that the admixtures would in future be sold with a proper declaration of their nature, or under a fancy or proprietary name. One dealer was prosecuted in respect of the presence of 56 per cent. of rice starch and fined £4.

*Preservative, &c., in Food.*—The ban on the use or the limitation of sulphite preservatives ( $\text{SO}_2$ ) in mince, &c., continued to be a somewhat sore point with the butcher trade, and proceedings in respect



of its presence showed no diminution. Prosecutions were necessary in regard to 31 samples, compared with 29 in 1928 and 12 in 1927. Representations for the modification of the Regulations continue to be made by the trade to the Central Authority, so far without success. At this late period, and in view of the concession enjoyed by butchers during the months of June to September under the Scottish Regulations, compared with his confreres in England, it is unlikely that the agitation will succeed.

The examination of preserves disclosed the presence of salicylic acid in several samples of jam—in one instance to the extent of 120 parts per million. Its use in any article of food or drink is now wholly proscribed, sulphite preservatives ( $\text{SO}^2$ ) not exceeding 40 parts per million being permitted only in the case of jams. As the *bona-fides* of the actual sellers was in no way suspect, and the source of supply found to be common, the matter was taken up with the makers, who readily accepted responsibility. In pursuing subsequent investigations it was found that, while the fresh untreated fruit was invariably used and no chemical preservative knowingly added, the possible source of the salicylic acid might be the liquid “jam preservative” used by the firm for immersing the “tissues” placed in contact with the jam before capping the jars, with a view to the prevention of mould. A sample of this liquid was obtained, and its analysis disclosed the presence of no less than 6.14 per cent. of salicylic acid. Proceedings were then taken, and a conviction obtained against the manufacturers of the so-called “jam preservative” in respect of the sale and description of an article likely to lead to its being used contrary to the Preservative Regulations.

The analyses of samples of potted meat disclosed the presence of boron preservatives equivalent to from 0.22 to 0.46 per cent. of boric acid. These were found to emanate from a common source, and the manufacturer was subsequently prosecuted and a conviction obtained.

In the case of sultanas, a considerable excess of sulphite preservatives was found in samples as sold by a firm of multiple shopkeepers. Supplies on sale were forthwith called in, and placed in store, pending further action. Their origin was subsequently traced as being part of a consignment from Greece, intended for Eastern countries where treatment with  $\text{SO}^2$  was not restricted, but which had inadvertently been consigned to a Glasgow importer. The sultanas withdrawn were subsequently mixed with untreated fruit, whereby the proportion of  $\text{SO}^2$  was brought well within the limit before redistribution.

Samples of Worcester sauce were found to be on sale, which, while the proportion of benzoates permitted was within the limits, were not labelled with the usual declarator as to its presence. Proceedings were subsequently successfully taken against the manufacturers.

Two informal samples of essence of rennet were found to contain boric acid, but these were probably the remainder of old stock, as

formal samples obtained later were found free from preservative.

In two samples of cream boric acid was reported present. The cream in question was imported from Northern Ireland, where the ban on boric acid does not meantime function, although similar regulations to those in Scotland were made and were to operate as from 1st January, 1929, but were postponed until 1st January, 1930. By a further Order they have again been postponed until 1st January, 1931. The importer was proceeded against and fined.

In the Report for 1928 reference was made at length to the presence of boric acid in citrous fruits. In this connection the analysis of a sample of oranges reputed to be free from artificial treatment may be quoted:—

	Washings from outside peel.	Peel.	Pulp.
Grains of boric acid per lb., ...	... 0.6	0.58	0.16

The Analyst's report further states:—"The proportion of boron compounds in this sample is consistent with that naturally present in the above variety of fruit."

Appended is table of samples in which preservatives, &c., were found, and the nature and amounts.

**ABSTRACT OF ARTICLES OF FOOD IN WHICH PRESERVATIVES, &C., WERE FOUND, AND THE NATURE AND AMOUNT, DURING YEAR ENDING 31ST DECEMBER, 1929.**

Nature of article.	Number examined.	No. in which Preservatives, &c., were found.	Nature of Preservative, &c.	Parts per million.	
				Lowest.	Highest.
Apricots (Dried), ...	1	1	Sulphur dioxide, ...	1,747	—
Butter, ...	648	2	Boric acid, ...	(Traces not estimated).	
Cream, ...	44	2	" " ...	0.11%	0.17%
Essence of rennet, ...	8	2	" " ...	0.012%	1.8%
Fruit salad (Dried), ...	1	1	Sulphur dioxide, ...	736	—
Grape fruit juice, ...	1	1	Benzoic acid, ...	660	—
Meat (Potted), ...	15	3	Sulphur dioxide (1), ...	6	—
			Boric acid (2), ...	0.22%	0.46%
Mince, ...	123	81	Sulphur dioxide, ...	16	1,220
Orange pulp, ...	1	1	Boric acid, ...	0.13 grains per lb.	
Preserves, ...	26	8	Sulphur dioxide (3), ...	8	64
			Salicylic acid (5), ...	4	120
Sauces, ...	15	5	Benzoic acid, ...	20	279
Sausages, ...	24	22	Sulphur dioxide, ...	76	480
Sausage meat, ...	5	4	" " ...	64	1,609
Sultanas, ...	51	13	" " ...	25	1,596
Wines (Non-alcoholic), ...	9	9	Benzoic acid, ...	96	1,609

*Milk (Special Designations) Orders.*—The details of licences in force at the end of 1929, with comparative figures for the two previous years, are as undernoted:—

	1929.	1928.	1927.
<b>Certified—</b>			
Producers, ....	1	1	1
Dealers, ....	46	40	34
Total average daily sales (gallons), ....	119	106	130
<b>Grade "A" (Tuberculin Tested)—</b>			
Producers, ....	—	—	—
Bottling establishments, ....	4	4	4
Dealers, ....	263	257	220
Total average daily sales (gallons), ....	922	955	940
<b>Grade "A"—</b>			
Producers, ....	—	—	—
Bottling establishments, ....	1	1	1
Dealers, ....	45	47	43
Total average daily sales (gallons), ....	*418	†420	‡445
<b>Pasteurised—</b>			
Pasteurising establishments, ....	2	2	3
Dealers, ....	15	16	15
Total average daily sales (gallons), ....	650	540	670

\* 400 gallons were pasteurised.

† 400

‡ 425

During the year a total of 262 samples of designated milks were procured and examined as to their conformity with the above Orders; a tabular statement of the results is appended.

#### RESULTS OF EXAMINATIONS OF DESIGNATED MILKS.

Designation and Requirements.	Number examined.	Agar Count per c.c.					Coliform Bacilli.		Fat minimum (3.5 %).		
		Number to conform to count.	Number exceeding count.	Lowest.	Highest.	Average of total samples.	-	+	Number above.	Number below.	Average Fat content.
CERTIFIED—											
Bacteria not to exceed 30,000; Coliform absent in $\frac{1}{10}$ c.c.; Fat not less than 3.5 per cent. }	65	65	—	400	28,300	4,439	61	4	63	2	4.05
GRADE "A" (Tuberculin Tested)—											
Bacteria not to exceed 200,000; Coliform absent in $\frac{1}{100}$ c.c.; Fat not less than 3.5 per cent. }	144	132	12	950	3,432,000	109,090	128	16	129*	13	3.91
GRADE "A"—											
Requirements are as for Grade } "A" (Tuberculin Tested),... }	12	12	—	3,250	179,950	55,608	12	—	7	5	3.58
GRADE "A" (Pasteurised)—											
Requirements are as for } "Certified," ... }	19	19	—	700	11,100	2,800	18	1	17	2	3.65
PASTEURISED—											
Bacteria not to exceed 100,000 } No Coliform test prescribed, }	22	22	—	2,700	91,300	17,377	12	10	20	2	3.63

\* Two samples were not examined as to fat content.

No special action was called for during the year in connection with the examination of the foregoing samples.

The exceptional weather conditions and water scarcity prevailing during a part of the summer were reflected in several excessively high counts, which were further partially contributed to by the carrying over of milk on the part of certain retailers to the day after receipt. It was found necessary to take proceedings against one milk dealer who, despite repeated requests, failed to apply for the necessary licence, a penalty of £3 being imposed.

It may be observed in relation to the present methods of tuberculin testing of cattle under the Orders, which, from time to time, have given rise to uneasiness and a certain amount of dissatisfaction as to their reliability, that it has now been enacted, in terms of Foods Circular, No. 20, 1929, issued by the Central Authority, that on and after 1st July, 1930, the double intradermal test shall alone be used, and the present alternative tests discarded.

A revision of the nomenclature of the several grades is still in the future, and in answer to a query in Parliament on 18th November, 1929, it was stated, on behalf of the Ministry, that lack of agreement amongst producers, as well as of Parliamentary time, would preclude at present the introduction of legislation. Should such a revision of the grades take place, there is no good reason why the permissible maxima in respect of bacterial counts should not be at least halved, if it is decided to continue the present grades of milk. Experience, and the results obtained since the commencement of these Orders, shows that this would entail no additional effort on the part of either producer or distributor, and would enable graded milk to compare more favourably, as regards bacterial content, with ordinary milk; the fact is, that ordinary milk is rapidly reaching the standards of graded milks.

As indicated in the report for last year, and again apparent in the figures for 1929, saturation point would appear to have been reached in so far as the requirements of the consuming public for milks of special designation are concerned. For this various reasons may be assigned, among which the following points as regards graded milk may be mentioned:—(1) Its increased cost, varying from 25 per cent. to 100 per cent., over that of non-designated milk; (2) the lack of knowledge and appreciation of its relative advantages by the average consumer; and (3) the great and increasing improvement in the quality of non-designated milk.

Early in the year representations were received from the Scottish Certified and Grade "A" (Tuberculin Tested) Producers Society, who sought to have the "day of production," which requires to be marked on the caps of the bottles, extended so as to include the evening milking of the previous day. The marketing of morning milk at a time suitable to consumers presented difficulties which,



in their opinion, warranted this concession. Sales would be enhanced and the consumer not prejudiced.

Alternatively, it was suggested that the official day should be deemed to end at noon. As the proposals would entail an amendment of the Order, the society's representatives were referred to the Central Authority, and later interviewed the Department of Health for Scotland, but so far nothing has been heard of the proposal. While much is to be said for the proposals, it is to be feared that the relaxation sought would, in practice, lead to the inclusion also of the morning milk of the previous day. The milk would thus be nearly 30 hours old on reaching the consumer, so that "day of production" would then have little meaning, and, in fact, be misleading to the consumer.

The alternative to this would be the omission of the "day of production" which, if the high quality of designated milk is to be maintained, would necessitate an exacting acidity test. On the whole, the maintenance of the *status quo* would appear desirable.

*Designated Milk Supplies to City Hospitals.*—Appended is an analysis of results of the bacteriological and chemical examination of samples obtained from producers' supplies as delivered to the City hospitals. As a change in the contractors was made as from 1st June, separate tables for the respective periods are shown.

# ABSTRACT OF RESULTS OF EXAMINATION OF DESIGNATED MILKS AS SUPPLIED TO CITY HOSPITALS.

For Period 1st January to 31st May, 1929.

Consignor.	Grade.	Examined as to Count and Coliform.							Examined as to Fat. Minimum = 3.5%			
		Number examined.	Number conform to count.	Number exceeding count.	Lowest.	Highest.	Average total samples.	Coliform Bacilli. - +	Number examined.	Number above.	Number below.	Average Fat content.
(L.),	... "A" (T.T.),	21	21	—	4,450	194,000	18,614	21 —	41	37	4	3.82
(A.),	... " " ...	18	15	3	6,050	899,000	142,994	15 3	38	29	9	3.60
(K.),	... " " ...	11	11	—	1,250	77,100	13,255	11 —	20	18	2	3.77
(B.),	... " " ...	22	21	1	6,800	549,150	62,725	17 5	39	36	3	3.98
(B.),	... " " ...	6	6	—	5,850	13,850	9,580	6 —	12	11	1	4.64
(F.),	... " " ...	1	1	—	4,200	—	—	1 —	7	6	1	4.04
(G.),	... " " ...	3	3	—	5,150	14,950	9,283	3 —	14	11	3	3.78
(B.),	... " " ...	8	8	—	8,050	52,950	15,637	8 —	18	12	6	3.63
(L.),	... " " ...	15	14	1	8,150	511,950	53,127	12 3	30	21	9	3.85
(A.),	... " " ...	17	15	2	1,000	989,000	96,065	16 1	37	36	1	3.84
(T.),	... Certified, ...	22	22	—	600	27,950	3,398	20 2	40	40	—	3.89



## For Period 1st June to 31st December, 1929.

Consignor.	Grade.	Examined as to Count and Coliform.							Examined as to Fat. Minimum = 3.5%.				
		Number examined.	Number conform to count.	Number exceeding count.	Lowest.	Highest.	Average total samples.	Coliform Bacilli.		Number examined.	Number above.	Number below.	Average per lb.
								-	+				
H. (L.), ...	" A " (T.T.),	14	12	2	1,100	2,688,000	316,075	11	3	30	29	1	4
S. (K.), ...	" ...	25	23	—	5,750	170,600	31,676	20	5	53	48	5	3
L. (E.K.), ...	" ...	15	13	2	1,400	345,350	61,613	12	3	25	24	1	4
R. (S.), ...	" ...	30	28	2	2,100	960,000	95,728	23	7	60	49	11	3
K. (L.), ...	" ...	21	21	—	3,600	38,150	15,090	20	1	47	44	3	3
F. (K.), ...	" ...	28	27	1	800	774,050	40,180	27	1	60	52	8	3
B. (L.), ...	" ...	19	19	—	2,150	131,000	23,329	16	3	55	54	1	3
P. (K.), ...	" ...	19	19	—	950	7,200	3,408	19	—	55	55	—	4
L. (B.), ...	" ...	3	3	—	84,400	122,200	106,700	3	—	12	12	—	3
P. (B.), ...	" ...	2	2	—	8,100	14,900	11,500	2	—	10	8	2	3

*Non-Designated Milks.*—With a view to determining the bacterial content of ordinary milk as it reaches the consumer, samples were procured throughout a period of the year, under what may be deemed adverse conditions of distribution and sale from a biological standpoint. The results of examination are as under:—

Date.	Agar count per c.c.	Coliforms.	
		1/100 c.c.	1/1000 c.c.
22/5/29, ...	71,050	+	—
	84,900	+	—
	45,450	+	+
12/6/29, ...	229,400	+	+
	39,300	+	+
	116,450	+	+
24/7/29, ...	10,150	+	—
	30,750	+	+
	25,150	+	+
8/8/29, ...	13,300	+	—
	21,300	+	—
	11,400	+	+
12/9/29, ...	11,600	+	+
	61,600	+	+
	22,200	+	+
19/9/29, ...	238,600	+	+
	61,850	+	+
	67,200	+	+
16/10/29, ...	16,300	+	—
	34,450	+	—
	15,400	—	—
16/11/29, ...	3,900	—	—
	3,250	—	—
	6,900	—	—
23/11/29, ...	22,950	+	+
	13,300	—	—
	171,500	+	—
14/12/29, ...	8,750	+	—
	3,250	—	—
	10,400	+	—
28/12/29, ...	33,400	+	+
	76,100	+	—
Bacterial Count, ...		Highest,	238,000
		Lowest,	3,250
		Average,	49,422

NOTE.—All the above samples consisted of loose or "dip" milk.

*Condensed and Dried Milks.*—Twenty-nine samples of condensed and five of dried milks as defined by the respective Regulations, including practically all known brands on sale, were obtained and submitted for analysis. As regards composition and labelling, all with one exception, were found to conform to requirements, the latter, a sample of dried full cream milk, being slightly low in fat content.

*Tubercle, &c., in Milk.*—During the year a total of 206 samples of raw milk as consigned by farmers to city dairymen were procured on arrival, and submitted for bacteriological examination. Six samples were reported as tuberculous, equivalent to 2.91 per cent., as against 3.98 per cent. in 1928, and 1.97 per cent. in 1927.

In connection with the six samples found positive, the subsequent inspection of the herds disclosed, with one exception, affected animals, a total of six cows in all being removed and slaughtered in terms of the Tuberculosis Order.

In regard to one of the positive samples, it was reported that biological tests of group samples subsequently taken from the herd had given negative results. It was learned, however, that prior to the latter, but antecedent to the taking of sample found positive, an animal had been sold by the farmer for slaughter, but could not be traced. A repeat sample was therefore taken of the supply on arrival, and again found positive. On a further inspection of the herd a tubercular cow was found by "smear" examination of samples of milk taken from each animal, and on its slaughter the condition of the udder fully confirmed the diagnosis of tubercle.

The animal sold for slaughter was doubtless the source of the first tuberculous sample, and the second due to the animal found by "smear" examination, in which the disease had become active in the interval subsequent to the group sampling of the herd. A further third sample of the supply was found negative.

With respect to the bacterial counts of the samples, the following table shows the results thereof:—

STATEMENT OF RESULTS OF EXAMINATION FOR BACTERIA OF  
FARMERS' SUPPLIES AS RECEIVED BY DAIRYMEN.

Number examined.	Average number of Bacteria per c.c.					Coliforms in 1/100 c.c. (2 days).	
	Under 100,000.	100,000 to 200,000.	200,000 to 500,000.	500,000 to 1,000,000.	Over 1,000,000.	—	+
206	138	20	25	6	17	151	55

As will be observed from above table, 77 per cent. were, in respect of bacterial count, of Grade "A" quality, as against 76 per cent. in the previous year. Of the 138 samples containing less than 100,000 bacteria per c.c. (equal to 67 per cent., the same as in 1928), 87 of these, or 63 per cent., were of "Certified" quality, compared with 64 per cent. in 1928.

With regard to coliform bacilli, its absence in 1/100 c.c. was reported in 73 per cent. of the samples, as against 64 per cent. in 1928. While conditions are somewhat static as regards bacterial counts, the increased percentage of samples with coliforms absent, as an index of manurial contamination, is gratifying. The very cordial co-operation of the officials of the Local Authorities of producing areas in connection with these samples is again acknowledged.

From enquiry and reports it would appear that in not a few instances one of the main causes of unsatisfactory counts was the failure on the part of milkers to reject the first two streams, at least, from each teat. When one recalls that the average bacterial count of these approximates 25,000 per c.c., the initial advantages conferred upon the milk are self evident if such a practice were universal. The periods of drought obtaining in 1929, with its attendant water scarcity and the not infrequent optimum temperatures at which milk had of necessity to be despatched, doubtless further militated against better results.

There is no gainsaying that the production of graded milk, apart from its inherent qualities and advantages to the consumer, has been a potential force in the production of a cleaner and better quality of ordinary market milk. This, together with the combined action of consuming and producing authorities in the examination of samples and the representations made thereafter, may be said to have given rise to the clean milk competitions now so common among producers.

The further tendency for creameries and other large distributors to insist upon advantage being taken of the facilities afforded at nominal fees by various agricultural institutes for periodic tests, as well as the exaction by Local Authorities of improved structural conditions, methods, and equipments, are also important contributing factors. The combined effects of these are being more and more felt, so that milk of invariably Grade "A" quality may now be deemed well within sight. It is now estimated that over 900 farmers are under periodic "clean milk" tests in the West of Scotland, more than one-half of which are in the chief milk-producing county, Ayrshire, alone. When one has regard to the small fee (one guinea) for which a farmer may for one year submit samples for examination monthly, there is no good reason why this condition should not in future be embodied in all contracts between producers and dealers.

*Merchandise Marks Acts and Orders.*—These, in relation to imported food stuffs affected, were referred to in detail in the Report for 1928, and are now all operative.

An endeavour was made by co-operation with trade organisations and otherwise to bring their requirements in respect of labelling and marking to the notice of traders affected, with, in most instances, satisfactory results. An exception was in the case of fruiterers, who

were slow to observe the requirements regarding imported apples, and legal proceedings were necessary on four occasions, penalties in all of £8 being imposed.

With regard to the indication of origin requiring to be marked on each imported egg, there was reason to believe that certain traders were obliterating the marking, and not infrequently these eggs were subsequently sold as "country." On surreptitious visits to the stores of two suspected dealers, the delinquents were caught "red-handed," being actually engaged in the removal of the marks. In one the liquid in use was taken possession of, and a subsequent analysis showed it to consist of a 20 per cent. solution of commercial hydrochloric acid. The full penalty of £5, with £3 costs, was imposed in each case, the Stipendiary Magistrate characterising the offences as "gross swindles," and regretting his inability to impose a higher penalty. Although such offences are deemed offences under the principal Act of 1887, in which a £20 penalty is exigible, this sum, in terms of section 5 (1) (i) of the 1926 Act, is reduced to one of £5, a sum usually associated with minor offences, and an altogether inadequate deterrent.

It may be observed that while the indication of origin is required by the Order to be "durably marked in ink," and to be incapable of removal by soap and water, it is readily obliterated by the use of any weak acid—a slightly glazed zone being left, compared with the usual matt surface which the remainder of the egg presents. This, however, is not at all times readily detectable. Representations were made in this regard to the Central Authority, and to the need for a more durable method of marking if this form of fraud was to be circumvented, and are being sympathetically considered.

Pending the discovery, if possible, and compulsory use of a standardised ink which could not be removed, or if removed would leave an etching on the shell, legal and technical difficulties emerge in the successful prosecution of certain types of cases. In this connection the aid of ultra-violet rays as a detective agency was invoked and successfully demonstrated in court in two further cases; in these full penalties were also imposed. A fifth offender had not only removed the indication of origin, but had applied a stamp to the eggs describing them as "Dumfries new laid." An additional charge of having applied a false description to "goods" contrary to the principal Act of 1887 was therefore preferred, penalties of £18 in all being imposed. Fines and expenses amounting *in cumulo* to £57 were inflicted under these Acts and Orders.

Four firms dealing in foodstuffs to which Orders in Council applied, were found to be offering for sale per price lists and by newspaper advertisement imported goods as being of a particular brand or under a specific designation, but without including therein an indication of their origin. As this is an offence in terms of section 5 (2) of the 1926 Act, the attention of the firms in question was directed to the matter; this ensured due compliance with the section.



*Agricultural Produce (Grading and Marking) Act, 1928.*—In terms of this Act, and as from 21st April, 1929, all premises used for the cold or chemical storage of eggs are required to be registered with the Local Authority. Applications for the registration of four cold storage premises were received and certification granted.

In terms of Regulations, dated 17th January, 1929, every British egg before removal from such premises is now required to be marked in the prescribed manner, *i.e.*, “conspicuously and legibly,” with the word “chilled,” but not as one would have expected either durably, or indelibly, or even in ink. It may be further observed that it is only at the time of removal that marking need be effected, and as this may occur at any hour of the day and no onus, in the opinion of the Central Authority, devolves upon occupiers of cold stores in this regard, the provisions of the Act are to all intents and purposes rendered nugatory, such eggs being incapable of subsequent identification. On the other hand, the corresponding Act and Regulations in force in Northern Ireland enacts that marking shall be effected before deposit in cold storage premises, and that records shall be kept by occupiers of quantities and ownerships, dates of deposits and removals, together with names and addresses of consignees. These facts have been brought to the notice of the Central Authority.

*Registration of Butter Factories, &c.*—In terms of section 8 of the Food and Drugs (Adulteration) Act, 1928, six applications for registrations were received during the year, one in respect of premises for use as a “butter factory,” and five in respect of wholesale dealing in margarine. All were found to conform to statute, and certificates of registration granted. Inspections at irregular periods were made in butter factories, and samples obtained therein submitted for analysis, all of which were found satisfactory. The nature and number of premises on the register to which the above section applies at present are as under:—

Manufactories of margarine,	...	...	...	—
Wholesale dealers in margarine,	...	...	...	281
Manufactories of milk-blended butter,	...	...	...	—
Wholesale dealers in milk-blended butter,	...	...	...	—
Butter factories,	...	...	...	18

*Fertilisers and Feeding Stuffs Act, 1926.*—In accordance with this statute a total of 29 samples of articles sold for use as food for cattle or poultry were procured and submitted to the Agricultural Analyst. Twenty-eight of these were obtained informally, and one in the prescribed manner. The informal samples, with two exceptions, were found to conform to statutory statement; in the latter a slight excess of fibre in both samples was reported, and dealers advised thereof. In the sample obtained in prescribed manner—clover hay meal for use



as an ingredient of a poultry food—an excess of sand was reported, Having regard to its subsequent admixture and use, and the low fibre content as against that declared, the article was not deemed materially false and to the prejudice of the purchaser, and no action was taken.

*Food Inspection, &c.*—A total of 14,785 inspections in relation to the detection of unsound or unwholesome food were made in markets, shops and stores during 1929. In connection therewith a total of over 92 tons of various foodstuffs were adjudged by the inspectors as unfit for human food, and accordingly destroyed or so dealt with as to preclude their use as such. The details of these are contained in the appendices.

In terms of the Public Health (Meat) Regulations (Scotland), 1924, Article 12, relating to certification of storage accommodation, one new application was received, and the premises, being found satisfactory, duly placed on register. The total of such premises on register at end of year was 10, in connection with which 46 copy certificates for the use of vehicles were issued.

Inspection as to conditions of storage or sale of foodstuffs generally was maintained, and where empowered, and action was called for, duly dealt with. In connection with five food premises, representations in relation to cleansing and repairs were made and readily complied with.

*Milk and Dairies (Scotland) Order, 1925.*—The use by dairymen of bottles other than their own again constitutes the major contravention of the above Order, and the inadequacy of penalties inflicted entirely fails to suppress the abuse against which the Order aims; the impression is thus spread that the offence is more or less venial. In all, there were twelve prosecutions for this offence, compared with nine in 1929, all of which were somewhat flagrant. Two of the offenders were admonished, and in the remainder modified penalties inflicted.

*Dairies.*—In terms of the Milk and Dairies (Scotland) Act, 1914, the total on the register at end of the year was 1,676, compared with 1,659 in 1928, an increase of 17. Of these, 315 were in respect of limited registration, whereby conditions of trading are restricted to the reception and sale of bottled milk only, as against 284 in the previous year.

Two applications for registration were refused, one in respect of the unsuitability of the premises, and one in respect of the unsuitability of the applicant. In the latter an appeal, in terms of the statute, was made to the sheriff. At the hearing of the case no appearance was made for the appellant, and expenses of one guinea were awarded the Local Authority. One certificate was revoked, owing to breach of conditional registration by the holder.

Inspections of dairy premises for the year totalled 23,332, in course of which 22 breaches of the bye-laws were noted, in one of which, relating to storage of milk in a dwelling-house, proceedings were taken and offender fined £1.

The new bye-laws, as finally approved of by the Department of Health for Scotland, have now, with other relative matter, been issued, and a copy, with explanatory circular letter, served on all interested parties.

*Milk Distribution.*—The distribution of milk in closed containers continues to grow apace. In view of the provision in the new bye-laws precluding the sale of “dip” milk elsewhere than within registered premises, this is likely to receive a further impetus. One firm of retail distributors, dealing with approximately 6,000 gallons daily, which were formerly sold loose till within two years ago, is now distributing over 80 per cent of its milk in bottles. The use of the glass bottle, however, entails a considerable oncost charge on the trade, a feature which has led to many efforts to evolve a satisfactory and destructible substitute.

The latest and most hygienic consists of a heavily waxed and sterilised cone-shaped cardboard container, of which delivery is made by machinery as required, obviating any “nesting” of containers, the whole process of manufacture, filling and closing being continuous. A comparison of costs would not appear to be in favour of this method, but it represents the greatest advance yet made in the production of an acceptable single-service container. The glass bottle, despite its drawbacks, is admittedly an attractive container, and coupled with the desire on the part of the average consumer to see what is colloquially termed the “cream line” will be difficult to displace.

*Byres.*—Each extension of the city causes an increase in byres for milch cows, but as building encroaches upon agricultural land, their numbers again diminish. This factor, as it operated at various periods, is set out in the subjoined tabular statement. The number of byres within the city’s curtilage at the end of the year was 53, with registered accommodation for 1,217 cows, the average number kept being 1,035, a slight increase on the previous year. A total of 453 inspections in these premises was made. All continue to be maintained and kept in a satisfactory manner,

**GLASGOW—STATEMENT SHOWING NUMBER OF BYRES WITHIN THE MUNICIPAL  
AREA AT SEVERAL PERIODS.**

Year.	City as at 1892.			Area annexed in 1905.			Area annexed in 1912.			Area annexed in 1926.			City.			City.
	No. of Dairy Byres,	No. of Cows licensed for	No. of Cows licensed for	No. of Dairy Byres,	No. of Cows licensed for	No. of Dairy Byres,	No. of Dairy Byres,	No. of Cows licensed for	No. of Dairy Byres,	No. of Dairy Byres,	No. of Cows licensed for	No. of Dairy Byres,	No. of Dairy Byres,	No. of Cows licensed for	No. of Cows licensed for	
1892,	... 143	1,661*	—	—	—	—	—	—	—	—	—	143	1,661*	669,059	214	
1900,	... 96	1,265	—	—	—	—	—	—	—	—	—	96	1,265	743,969	129	
1905,	... 80	1,049	1	12	—	—	—	—	—	—	—	81	1,061	765,389	106	
1913,	... 44	735	—	—	38	606	—	—	—	—	—	82	1,341	1,021,789	80	
1926,	... 11	168	—	—	13	228	41	1,004	—	—	—	65	1,400	1,121,546	58	
At 31/12/29,	5	150	—	—	14	252	34	815	—	—	—	53	1,217	1,160,720	46	

\* This figure represents number of cows kept.

*Ice Cream Shops.*—In terms of the Glasgow Corporation Order, 1919, a total of 618 shops were on the dairy register at the end of the year, compared with 602 in 1928—an increase of 16. Practically all dealers in this commodity are of Italian nationality, and, while the majority are unable to read or apprehend the purport of bye-laws, they are nevertheless extremely amenable to representations that may be made to them in the course of the periodic inspection of their premises, and on the whole give little cause for complaint. A total of 9,734 inspections therein was made, and eight minor breaches of bye-laws, and five of repairs or improvements deemed requisite were notified, and duly complied with.

ALEXR. B. FINDLAY,  
*Senior Food Inspector.*

28th March, 1930.

## THE FOOD AND DRUGS (ADULTERATION) ACT.

TABLE SHOWING NATURE AND NUMBER OF TOTAL SAMPLES  
PROCURED AND EXAMINED DURING 1929.

Nature of Sample.	Informal.		Statutory.		Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.		Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Almonds, ground,	1	—	3	—	Meat, potted, ...	14	2	1	1
Apricots, canned,	6	—	—	—	Milk, condensed,	24	—	—	—
„ dried, ...	—	—	1	—	„ dried, ...	4	—	—	—
Arrowroot, ...	8	—	3	—	„ dried, and	—	—	—	—
Bacon, ...	10	—	1	—	„ Virol, ...	1	—	—	—
Baking Powder, ...	2	—	—	—	„ evaporated,	5	—	—	—
Barley, ...	10	—	4	—	„ skimmed,	9	—	11	—
Blood Pudding,	5	—	—	—	„ sweet, ...	2,234	82	837	21
Boracic Acid Powder,	4	—	—	—	Mince, ...	73	30	50	30
Borax, purified,	12	1	3	—	Mincedmeat, ...	2	—	3	2
„ and Honey,	1	—	—	—	Mustard, ...	13	—	5	—
Brandy, ...	4	—	—	—	Oatmeal, ...	1	—	3	—
Butter, ...	561	8	87	4	Oil, camphor, ...	29	1	2	—
Cascara Sagrada,	6	—	9	—	„ castor, ...	7	—	—	—
Cheese, ...	38	—	19	2	„ cod liver, ...	4	—	1	—
Cherries, preserved,	2	—	1	—	„ eucalyptus,	16	—	3	—
Cinnamon, ground,	6	—	12	1	„ olive, ...	24	—	—	—
Cocoa, ...	6	—	1	—	Ointment, zinc, ...	8	—	—	—
Coffee, ...	24	—	9	—	Orange Pulp, ...	1	—	—	—
Confectionery, ...	8	—	—	—	Paregoric, ...	6	—	—	—
Constipon, ...	1	—	—	—	Parrish's Syrup,	3	—	—	—
Cornflour, ...	2	—	2	—	Pickles, ...	3	—	1	—
Cream, ...	31	2	13	1	Pepper, compound,	4	2	2	—
Cream of Tartar,	26	—	14	—	„ black, ...	4	—	4	—
Curry Powder, ...	2	—	—	—	„ white, ...	34	4	25	1
Currants, ...	10	—	10	—	Peaches, canned,	6	—	—	—
Custard Powder,	1	—	2	—	Pears, canned, ...	2	—	—	—
Dripping, ...	31	—	11	—	Peas, canned, ...	6	—	1	—
Easton's Syrup,	3	—	—	—	Pork and Beans,	1	—	—	—
Epsom Salts, ...	8	—	—	—	Preserves, ...	11	—	15	3
Essence of Coffee	—	—	—	—	Prunes, ...	3	—	7	—
and Chiocry, ...	1	—	—	—	Raisins, ...	2	—	3	—
Essence of Rennet,	8	2	—	—	Rice, ...	2	—	9	—
Figs, ...	2	—	—	—	Rice Flour, ...	1	—	—	—
Fish, paste, ...	10	—	1	—	Rochelle Salts, ...	1	—	—	—
„ shredded, ...	1	—	—	—	Rum, ...	55	1	5	—
Flour, self-raising,	2	—	8	—	Sauce, ...	7	1	8	—
Flowers of Sulphur,	13	1	2	—	Sausages, ...	21	1	3	—
Fruit Salad, dried,	—	—	1	—	Sausage Meat, ...	1	—	4	2
Gin, ...	19	—	—	—	Seidlitz Powder,	2	—	—	—
Ginger, ground,	5	—	8	—	Semolina, ...	1	—	—	—
Glycerine, ...	1	—	—	—	Sponges, ...	1	—	—	—
Grape Fruit Juice,	1	1	—	—	Sugar, ...	1	—	1	—
Gregory's Powder,	5	—	—	—	Sultanas, ...	31	1	20	3
Ham, ...	41	—	2	—	Suet, shredded, ...	3	—	3	—
Headache Powder,	1	—	—	—	Sweet Spirit of	—	—	—	—
Honey, ...	5	—	—	—	Nitre, ...	2	—	—	—
Lard, ...	19	—	18	—	Tapioca, ...	—	—	3	—
Lime Juice Cordial,	3	—	—	—	Tartaric Acid, ...	11	—	1	—
Lime Water, ...	9	2	—	—	Tea, ...	4	—	3	—
Liquorice Powder,	2	—	—	—	Tincture of Iodine,	21	1	4	—
Liniment of Tur-	—	—	—	—	Vinegar, ...	6	—	4	—
pentine, ...	2	—	—	—	Whisky, ...	136	11	20	—
Linseed, crushed,	4	—	—	—	Wine, alcoholic,	1	—	—	—
Lemon Curd, ...	2	—	—	—	„ non-alcoholic,	6	—	3	—
Lemon Peel, ...	2	—	1	—	Yeast Tablets, ...	1	—	—	—
Margarine, ...	8	—	24	—					
Meat, glassed, ...	5	—	1	—					
„ paste, ...	6	—	—	—					
						3,875	154	1,336	71



## THE FOOD AND DRUGS (ADULTERATION) ACT, 1928.

DETAILS OF SAMPLES IN WHICH PROCEEDINGS WERE INITIATED  
DURING YEAR 1929.

Number of Complaints	Nature of Sample and alleged Offence.	Number of Convictions.	Amount of Fines imposed.			Number dismissed or found "Not proven."	Number deserted simpliciter.	Number withdrawn and Expenses paid.	Amount of Expenses paid.			
			£	s.	d.				£	s.	d.	
2	Butter—Contained Fat other than Milk-Fat, ... ..	2	15	0	0	—	—	—	—			
1	„ Contained excess Water, ...	1	2	0	0	—	—	—	—			
1	Cinnamon (Ground)—Contained excess Sand, ... ..	—	—	—	—	—	—	1	1	1	0	
1	Cream—Contained Boric Acid, ...	1	2	2	0	—	—	—	—			
1	Cream Cheese—Prepared from partially Skimmed Milk, ... ..	1	10	0	0	—	—	—	—			
3	Margarine—Failing to label, ... ..	3	6	0	0	—	—	—	—			
4	„ Failing to use statutory wrapper, ... ..	4	10	0	0	—	—	—	—			
1	Meat (Potted)—Contained Boric Acid, ...	1	2	0	0	—	—	—	—			
11	Milk (Sweet)—Deficient in Milk-Fat, ...	10	57	0	0	1	—	—	—			
1	„ „ Deficient in Milk Solids other than Fat, ...	1	8	0	0	—	—	—	—			
27	Mince—Contained Sulphite Preservatives during proscribed period, ...	27	102	0	0	—	—	—	—			
2	„ Contained excess of Sulphite Preservatives during permitted period, ... ..	2	7	0	0	—	—	—	—			
1	Pepper (White)—Contained Rice Starch, ...	1	4	0	0	—	—	—	—			
3	Preserves—Contained Salicylic Acid, ...	1	3	0	0	—	—	2	4	4	0	
2	Sausage Meat—Contained excess of Sulphite Preservatives, ... ..	2	9	0	0	—	—	—	—			
3	Sultanas—Contained excess of Sulphite Preservatives, ... ..	1	2	0	0	—	—	2	2	12	6	
64			58	£239	2	0	1	—	5	£7	17	6

ABSTRACT OF PROCEEDINGS UNDER OTHER THAN THE FOOD AND DRUGS  
(ADULTERATION) ACT, 1928.

Act, Order or Regulation.	Nature of Offence.	Number of Complaints.	Number of Convictions.	Amount of Fines imposed.	
				£	s.
Merchandise Marks Acts and Orders.	Imported fresh Apples—Failing to label with indication of origin.	4	4	8	0
„ „ „ ...	Imported Hen Eggs in shell—Removing the indication of origin.	5	5	37	10
„ „ „ ...	Imported Hen Eggs in shell—Applying a false description.	1	1	11	10
Public Health (Preservatives, &c., in Food) Regulations.	Describing a liquid as “Jam Preservative,” which contained salicylic acid.	1	1	2	0
„ „ „ ...	Failing to label Sauce, containing preservative.	1	1	2	0
Milk and Dairies (Scotland) Order, 1925.	Using milk bottles other than own.	12	12	19	0
Milk and Dairies (Amendment) Act, 1922.	Selling designated Milk without a licence.	1	1	3	0
Dairy Bye-Laws, ... ..	Storing Milk in dwelling-house,	1	1	1	0
		26	26	£84	0

## AIR PURIFICATION—SMOKE ABATEMENT.

The problem of air purification has been one of the most difficult in public health administration, because, on the one hand, of its inseparable association with the economic life of industrial communities and, on the other, its relationship with meteorological conditions. There are two main causes of smoke pollution—the furnace chimney and the open fire in the dwelling house. The latter aspect of the question has been attracting attention during the past few years, and efforts to reduce this source of pollution have been made in the direction of introducing, in newer houses, smokeless means of heating, such as by electric or even gas radiators. More recently smokeless fuel of various qualities has been produced for use in open fires and ranges.

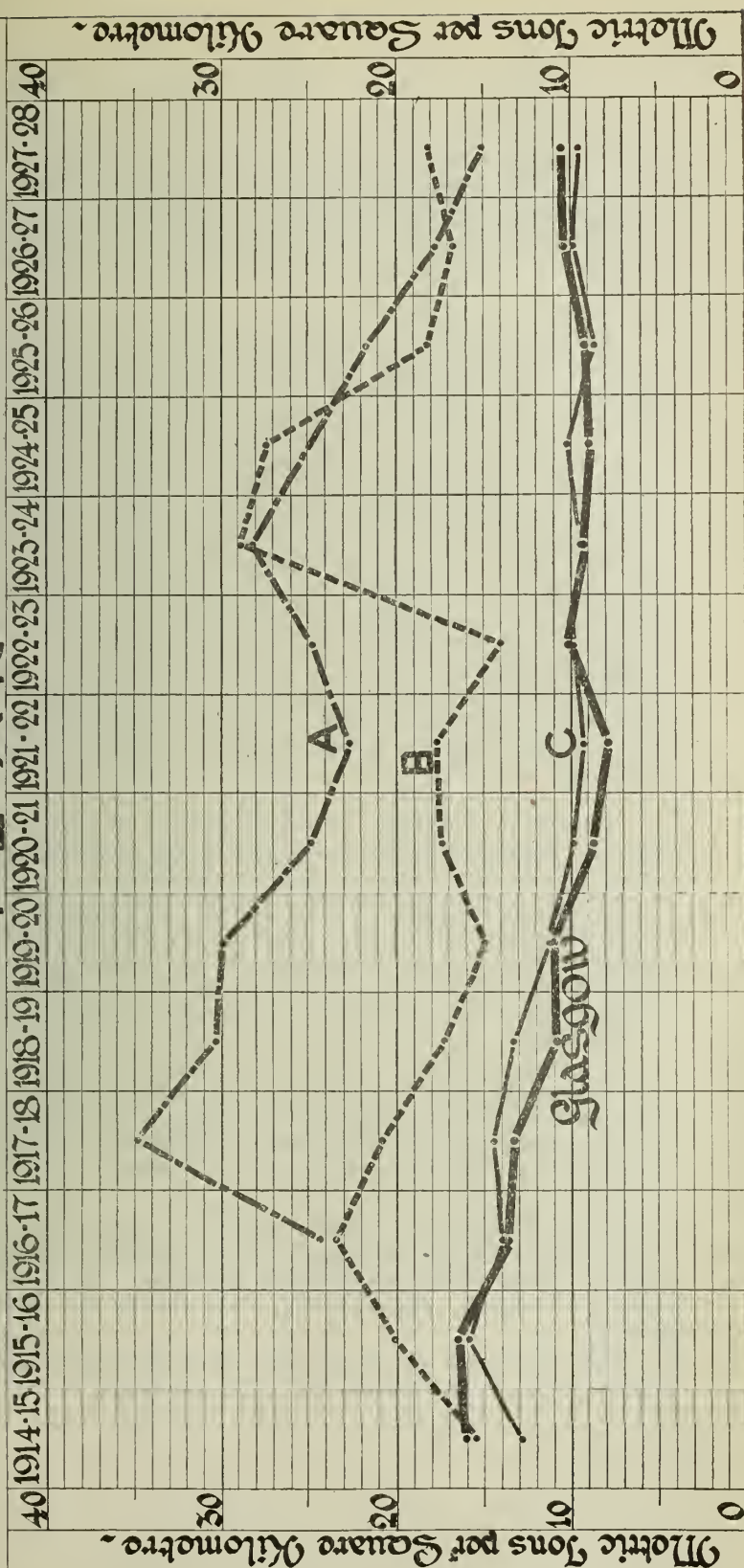
Legislation, however, over a long period of years has been definitely directed towards the reduction of atmospheric pollution from factory chimneys or other furnaces for power purposes, and it is this aspect of the subject which is demonstrated in the chart on the opposite page. For many years the Corporation have been co-operating with the Advisory Committee on Atmospheric Pollution in an endeavour to obtain accurate records of the amount of pollution in the atmosphere as measured by the solids deposited in standard gauges, of which there are nine situated mostly in public parks in various districts of the City. It is on these records that the returns published in a table included in this section of the report from year to year, have been made up.

A number of other towns, mostly industrial centres in England, have also co-operated in the enquiry, but because of the War and the fact that in others continuous records are not available over a period, only three which were reasonably complete in addition to Glasgow, have been included in the diagram. In the case of Glasgow there has been a reduction in the atmospheric deposits since 1914-15 of over 30 per cent., the amount in each year being closely associated with the returns for London, which are indicated by line C. In this comparison it should be borne in mind, that the annual rainfall in Glasgow is much heavier than that of London, and to that extent there may be the tendency to carry down more soot and other forms of atmospheric pollution, although, on the other hand, the drier atmospheric conditions usually associated with anti-cyclonic weather which London enjoys might prevent to a large extent the impurities being carried away by wind. The other two lines on the graph show some considerable variations, heavy deposits occurring during the War and again during the period of industrial improvement which followed the post-war trade depression of 1921-22.

The effect of the coal strike in 1921 is not very pronounced, but there is a very definite drop in the two English industrial centres during 1926, when there was another coal stoppage. The reduction in these towns in the later years may be due to improvements effected as the result of measures taken to prevent the pollution of the atmosphere from furnace chimneys.

# Monthly Mean Deposits of Total Solids in 'Metric' Tons per Square Kilometre over Glasgow compared with other three Cities.

Y E A R



In the year 1927-28, for which returns are available for a number of other towns, Glasgow compares favourably with all of them, the average mean monthly deposit being 10.41 metric tons per square kilometre, against 8.40 in Birmingham and 9.44 in London, while the records of other towns are considerably in excess of that of Glasgow.

*Domestic Chimneys.*—It is difficult to assess the proportion of pollution caused by domestic fires, although it is known that the amount of coal consumed annually in them is considerably in excess of the amount supplied for manufacturing and other purposes. Recently on the suggestion of Dr. Owens of the Fuel Research Division of the Committee on Atmospheric Pollution, five automatic air filters were installed in Glasgow at the following places:—Glasgow Cross, Belvidere Hospital, Maryhill Police Office, Govan Police Office and Queen's Park. These recorders indicate by shades on a sensitised paper ribbon the amount of fog or atmospheric pollution throughout each hour of the day. Separate tabulations of the records obtained for week-days and Sundays have been charted in the following diagram, thus giving an indication of the difference in the atmospheric conditions on Sundays, when there is little pollution by furnace chimneys as compared with week-days. The control of these recorders and the tabulation of the records are undertaken by the Corporation Chemical Department, and Mr. F. W. Harris, the Corporation Chemist, has supplied the following notes.

*Atmospheric Pollution.*—The measurement of the quantity of impurity suspended in the atmosphere at any particular moment is carried out by the "Owen's Automatic Air Filter."

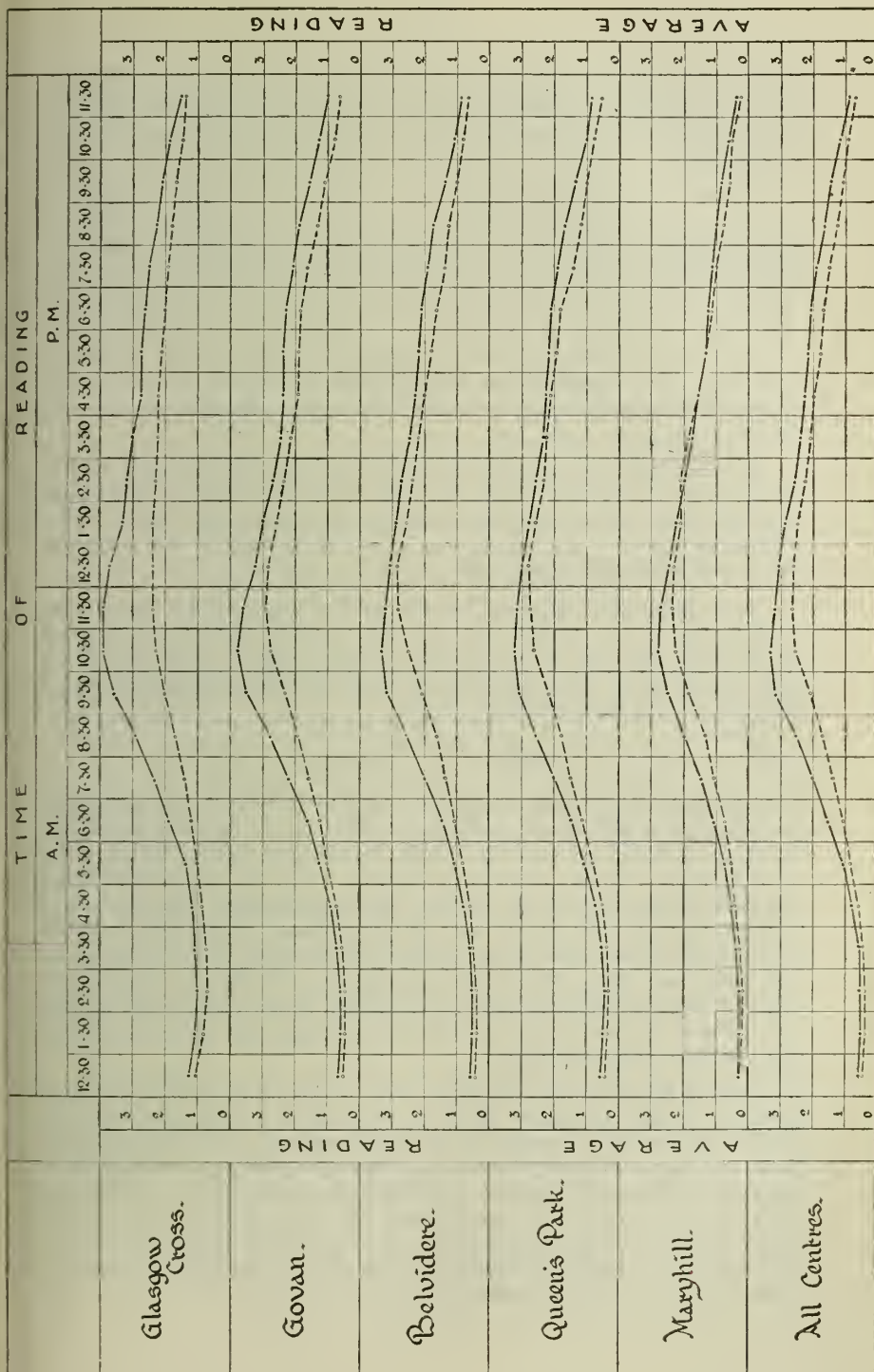
The principle of this method was used in Glasgow as far back as 1910, when quantities of approximately 50 cubic feet of air were aspirated through white filter paper by means of a pump, the discoloration produced by the suspended impurity forming a measure of the pollution. This principle, on elaboration, has evolved into the Owen's filter.

In this apparatus two litres of air are filtered by means of a water syphon through a small circular area near the outer edge of a clock face made of porous filter paper. The suspended impurities in the air are arrested by the paper, which is discoloured to a depth corresponding to the intensity of the pollution existing in the air at the moment.

A flexible diaphragm operated on by the air pressure outside the apparatus releases the paper clock face by allowing the apparatus to fill with water, whilst simultaneously the paper is moved round by a system of weights. Approximately three records are obtained each hour.

The intensity of the discoloration of the small area is compared with a series of standard shades, which correspond to the degree of





WEEK-DAYS. ————— SUNDAYS. —————

pollution of the atmosphere by smoke, &c. Thus Shade 1 indicates the existence of .54 lb. of impurity per million cubic yards of air.

At present five of these air filters are in operation at various points in Glasgow.

In the curves appended hereto are given the average readings at hourly intervals during 24 hours for week days (Monday to Friday) and Sundays, for the five stations at which air filters are installed. The period given is the winter six months, 1st October, 1928, to 31st March, 1929. The curves are expressed in terms of standard shade readings.

It will be observed that the degree of atmospheric pollution increases to a maximum in the early forenoon, both on week-days and on Sundays, but that the maximum appears appreciably later on Sundays than on week-days.

It can safely be assumed that on Sundays the pollution of the atmosphere is attributable to domestic sources, whilst on week-days the pollution is due both to domestic and industrial firing. The difference between the two curves is thus a measure of the pollution due entirely to industrial firing.

It is noticeable that by far the greater part of the aerial contamination is due to the domestic fire even in the industrial parts of the city, and that in the suburbs, notably Queen's Park and Maryhill, except for a brief period in the forenoon, the pollution is almost entirely due to the household grate.

### SMOKE ABATEMENT.

The year 1929 registers still another step forward in the campaign for a purer atmosphere, with the union of the Smoke Abatement League of Great Britain and the Coal Smoke Abatement Society to form the new National Smoke Abatement Society. The inaugural conference was held at Buxton during the first week of October. The Executive Council is composed of members of both defunct organisations. This important merger will further consolidate interests, and its sphere of influence now comprehends the country as a whole, so desirable in view of the powers which will be contained in the anticipated Smoke Abatement Bill for Scotland, under which larger areas may be adopted for uniform administration.

During the past year the diminution of industrial smoke was very evident to the inspectors in their systematic routine observations. While due in some measure to the installation of more efficient plant and auxiliary gear, or alterations made to existing arrangements, frequently carried out on the suggestion and advice of the inspectors, this result can be traced more directly to the putting into practice of the greater technical knowledge held by those immediately concerned of the methods of stoking, composition, and use of more suitable fuels and general management of plant.

In the gradual achievement of this result, our Department and the Scottish Branch of the National Smoke Abatement Society can justly claim a large share, owing to the practical technical advice given daily, and the comprehensive educational facilities which have been afforded firemen and others for the period of fourteen years.

*Improvements to Plant.*—In the Annual Report for 1928, a summary record was included of the improvements carried through during that period, with a view to smoke abatement. The following list gives those effected by various industries during the past year:—

Number of new steam boilers installed to give increased power, ...	8
„ mechanical stokers fitted to steam boiler furnaces, ...	1
„ secondary air smoke-preventing appliances fitted to steam boilers, ... ..	5
„ furnaces in which anthracite, coke, or other non-bituminous fuel has been substituted for ordinary coal, ...	15
„ furnaces adapted for smokeless combustion of oil fuel, ...	1
„ steam boilers replaced by electric motors (using Corporation power), ... ..	5
„ new chimneys erected, or existing chimneys heightened to give increased draught to carry gases higher, ...	6
„ improvements to furnaces not coming under any of the above headings, ... ..	4

A progressive step was taken by a firm of bleachers and dyers in the south-west of the City. Previously their steam requirements were met by four Lancashire boilers burning a highly bituminous type of fuel, and in consequence the chimney was a frequent source of nuisance. A large water-tube boiler of the most modern type, fitted with chain grate stoker, induced draught, and patent fuel conveyer gear was installed in place of the above boilers, and a much lower grade of fuel is now being burned successfully, and the chimney is almost smokeless.

A notable improvement was effected by a large galvanizing firm in the south-side of the City, in the conversion of all of their spelter-bath furnaces to coke, instead of the usual splint coal employed in this class of work. Chimneys connected with similar premises elsewhere have given much trouble, and have been the subject of many prosecutions in the past.

Electrification of a number of the steam-cranes at the harbour has been adopted by the Clyde Navigation Trustees, and the work will be completed during the year 1930. These appliances are very frequently most unsatisfactory from the smoke point of view, owing to the fluctuating nature of the load on the boilers and erratic stoking. Still another instance of progression towards smoke abatement is afforded by the action of the Corporation. With a view to bringing the older plants of a large steam-using department in the City completely up-to-date, a special sub-committee was appointed to consider and report on the alteration and additions necessary. This action

was taken on account of the unsatisfactory behaviour of several of the Department's chimneys in regard to smoke and grit. A comprehensive scheme of improvements has been drawn up which, when carried through, should make the chimneys almost smokeless.

There is no doubt that in most process furnace work more use could be made of gas or non-bituminous fuels, but the cost of plant conversion to use these fuels appears often to be the stumbling block; but those firms who take the long view and are willing to spend the necessary money ultimately find that the newer methods also pay.

*Summary of Work.*—The following is a summary of the work of the Smoke Inspectors during the year:—

Number of inspections of steam boilers and other furnaces,	...	1,372
„ observations of chimneys, ... ..	...	28,893
„ intimations of excess smoke given, ... ..	...	359
„ warning notices issued, ... ..	...	19

*Prosecutions.*—Twenty-four prosecutions were taken in the Central Police Court before the Stipendiary Magistrate against firms for allowing excessive smoke to issue from their chimneys. Of this number 20 were convicted, and fines totalling £32 1s. were imposed. The number was composed of ten first offences, with an average penalty of 22s.; six second offences, an average penalty of 30s. 2d.; one third offence, penalty £2; two fourth offences, average penalty £3 10s.; and one sixth offence, penalty £3. The maximum penalty is 40s. for a first offence, and £5 for a second or subsequent offence if committed within five years of the immediately previous one.

In two cases, including one of a special nature, decision was deferred on a promise being given to effect immediate improvements and subject to a favourable report by the smoke inspectors. On again being called the cases were dismissed. In the remaining two cases—one a steamer on the river—a decision of “not proven” was given.

*Complaints.*—A very large number of complaints were dealt with during the year, mostly occasioned by the emission of smoke from low chimneys connected with small boiler plants, heating and process work, adjacent to dwelling-houses. Each complaint was investigated, suggestions made, and advice given to the furnace users with a view to plant alteration, increasing height of existing chimneys if practicable, or changing to non-bituminous or more suitable fuels. In almost every case permanent remedial measures were adopted to the satisfaction of the complainers. A number of complaints were found to be of a not very serious nature, which would appear to indicate that public opinion is becoming more appreciative of the necessity for a purer atmosphere. Section 85 of the Glasgow Building Regulations Act, 1900, requires that every new chimney being erected in connec-



tion with any steam boiler or other furnace, for commercial or manufacturing purposes, shall be built to the height of the highest chimney of any dwelling-house, if within a hundred feet of a dwelling-house. Failure to comply with the above regulations causes most of the complaints received.

Central heating plants employing boilers of sectional type were the cause of a considerable number of the complaints. These boilers are of a design only suited for the use of non-bituminous fuels, such as ordinary gas coke, anthracite, coal, or any of the smokeless fuels, and the burning of bituminous fuels causes them to become frequent smoke producers, unless the greatest care is exercised in their management.

*Steam-Wagons and Tar-Melters.*—Steam wagons were again the subject of a number of prosecutions during the year. Smoke and grit from this source of pollution are doubly obnoxious owing to their proximity to street level; even smoke of light densities is objectionable in busy thoroughfares. Dense smoke, apart from constituting a nuisance, is a menace to fast moving traffic. Offenders generally state in defence that they are using fuels of low volatility, but the analyses of the samples taken invariably show an average volatile content of 20 per cent., which, although in ordinary practice would certainly be low, is too high for this class of work, notwithstanding that more care in stoking is being exercised than formerly. Until the use in these vehicles of non-bituminous or smokeless fuels is made compulsory within the City boundaries, this nuisance will continue. Observation of these vehicles was made by motor-cycle towards the end of the year, particularly from the City boundary inwards, and is still being continued.

Only one tar-melter was prosecuted. These vehicles now use mostly coke, which is found to be quite satisfactory. In this particular case the melter attendant had allowed his stock of coke to run out, and had made use of part of a load of highly bituminous fuel. A very high emission of dense smoke was the result. As in the case of steam-wagons, and for the same reason, smoke of even medium densities from these appliances is very objectionable.

*Shipping in the Harbour.*—At the beginning of the year, subsequent to a recommendation by the Air Purification Sub-committee, an arrangement was made whereby the shipping in the harbour also came under the jurisdiction of the inspectors. Hitherto this branch was wholly under supervision by the Marine Division of Glasgow Police, who, when prosecuting offenders, did so under the Clyde Navigation Bye-laws.

During the year proceedings were taken against a Clyde Steamship Company, in respect of a river passenger steamer, the first taken at the instigation of this department. The law agents for the company



objected to the relevancy of the complaint on various points, and particularly to the complaint being taken under Section 31 of the Glasgow Police (Further Powers) Act, 1892, that being the act under which all complaints are taken. The Stipendiary Magistrate repelled the objections. At the final hearing, after evidence being led by two smoke inspectors for the prosecution, and by the chief engineer and a stoker for the shipping company, a decision of not proven was given. Observations indicate that, in dealing with the harbour, more trouble is likely to be experienced with the smaller craft and coastwise traffic than with the ocean-going vessels, as they generally have a larger margin of boiler power at their disposal while in the harbour, and consequently less forced firing.

*Soot-collecting Gauges.*—During 1929 the mean soot and dust fall from the atmosphere, indicated by the gauges, nine in number, situated in the parks throughout the city, was 278·2 tons per square mile. Comparing this figure with that for the previous year, a decrease of 18·65 tons is shown, while a comparison with the previous six years' average of 292·33 tons indicates a reduction for the year of 14·13 tons per square mile. The mean monthly rainfall during 1929 was 71·99 millimetres, while the mean for the six-yearly period was 76·8 millimetres. Again, comparing the six summer with the six winter months, the mean deposit per month was almost three tons (2·96) heavier during the latter period, which had a higher mean rainfall of 79·3 millimetres, compared with 64·7 during the summer.

These comparisons show the correlation between rainfall and deposit, and, as has been stated previously in these reports, not only is the total amount of rainfall over a given period a direct factor, but it also affects the distribution of the deposit. Frequent light rainfall will produce a heavier precipitation of total solids than would the same amount if falling in very heavy showers at long intervals.

A table giving the average monthly deposit of each element of atmospheric pollution for the year is appended hereto.

*Smoke Abatement Classes.*—As a large part of the Smoke Inspectors' daily duties consists in acting in an advisory capacity and affording technical advice to boiler and furnace users relative to fuels, general efficiency, and economy, most of the improvements noted in the behaviour of chimneys connected with the very large number of hand-fired plants in operation is attributable to the advice so given when inspections are being made, and to the educational work carried on during the winter months in the classes for boiler attendants and others.

These classes are held under the auspices of the Scottish Branch of the National Smoke Abatement Society, and meet on one evening each week, the course syllabus being very comprehensive. Two classes are carried on—an ordinary and an advanced one, meeting on alternate

weeks—twelve lectures being given in each course, or twenty-four in all. Men enrolling have the option of attending both classes on payment of the one nominal fee of 2s. 6d. At the end of the session an examination is held, on the results of which prizes and certificates are later awarded at a special social meeting. The past session, 1929-30, the fourteenth since the inception of the classes in 1910, created a record in enrolments and number attending. One hundred and ten men enrolled, bringing the total enrolments since the beginning of the classes to 1,057.

To the written examination held on 15th March, 27 men came forward to compete for the four prizes in the ordinary class, and seven men for the three prizes in the advanced class. Merit certificates are gained by those having not less than 70 per cent. marks, and full attendance certificates are awarded to those qualifying for same. Seventeen men in the ordinary class and six men in the advanced class gained merit certificates, while a total of 42 men qualified for full attendance certificates. The average attendance for the session was 79 per cent. Certificates and prizes will be presented at the Annual Social Meeting convened by the Scottish Branch of the Society held during May.

THOS. M. ASHFORD,  
*Senior Smoke Inspector.*

April, 1930.

# AVERAGE DEPOSIT OF EACH ELEMENT OF ATMOSPHERIC POLLUTION FOR EACH MONTH OF 1929.

English Tons per Square Mile.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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## GENERAL SANITARY OPERATIONS.

The reports by the Divisional Sanitary Inspectors are included in this section; they deal with the work of the department as given in detail in Table XXIII. of the Appendix, which contains tabulated particulars of inspections, nuisances, &c., in each municipal ward and for the City. References are made to the principal statistics for each division, and comments are made on the more important complaints or problems arising during the year.

## CENTRAL DIVISION.

During the year over 11,000 complaints were dealt with. Disputes and complaints regarding the cleansing of stairs and closes occupied a considerable part of the time of the inspectors.

Two rather unusual complaints in respect of stair cleansing were received. A householder objected to cleanse the stair on account of excessive traffic into the house of a neighbour, who was holding largely attended spiritualistic meetings twice nightly. In another case, excessive traffic was made the plea for refusal to cleanse the stairs. In this instance a dance hall on the top flat of the property was the cause of the trouble, but the hall-keeper undertook the entire washing of the stairs. Bookmakers in similar circumstances avoid trouble by arranging to have the close and stairs washed regularly.

All the prosecutions in court were in connection with the non-observance of the bye-laws relating to stair cleansing—10 in number. Fines of from 5s. to 20s. were imposed.

On several occasions during the year attention was drawn to insects of various descriptions. At midsummer, the kitchen of a house in Hillhead was over-run by small insects which crept up the walls and lodged in crevices. A large hamper in the kitchen was found riddled with small perforations, such as are produced by the larvæ of the furniture beetle. The cause of the nuisance was found to be adult wood-boring beetles. Several houses were afterwards found to be infested in a similar manner.

From the Whiteinch district complaints were made regarding smells in a tenement. It was discovered on gaining access to one of the houses that the occupier was serving a term of imprisonment, and that four cats had been left without food or water. The bed recess and the floor of the house to at least half its extent, from floor to ceiling, were stacked with books, old papers, &c., amounting to two tons, during the removal of which the carcasses of five cats were found. The occupant of the house had also made a hole in the ceiling, and had commenced to use the attic as a store.

The conversion from conservancy systems of sewage removal to the water carriage system, mostly in outlying areas, is gradually being

accomplished. There are still 112 privies in the division, serving the requirements of 41 properties. Only three of those properties are in the centre of the city in workshop yards. They exist meantime because of the difficulty of getting a sewer connection. The remaining 109 privies are in outlying properties in the west and north-west areas, where there are 20 privies at Netherton Rows and 20 at Knightswood Rows. There are 20 privies in three public works in Bearsden Road and Netherton Road because there is no sewer within a hundred yards of the premises. The remaining privies are scattered over the north-west area in isolated houses, and as sewers are brought within a reasonable distance substitution of water-closets will be required. In several tenements additional water-closets have been provided, and water supply has been introduced into eight houses previously supplied from a "Kennedy" well in the back court.

*The Rag Flock Act, 1911.*—During the year 22 samples of rag flock were procured at various bedding and upholstery manufactories in the division. These samples were analysed by the Corporation Chemist, who certified that the parts of chlorine per 100,000 parts of flock ranged from four parts to twenty-four parts, and that all the samples conformed to the requirements of the Rag Flock Act and Regulations made thereunder.

*Rat Destruction.*—As in former years, circulars were issued to 1,830 occupiers of premises likely to be infested with rats—restaurants, grocers' shops, butchers' shops, grain stores, bakeries, stables, farms, and piggeries—directing the attention of the occupiers to the request of the Board of Agriculture that special effort should be made to destroy the vermin during Rat Week. The services of the inspectors were sought by many occupiers of rat-infested properties. There are now 229 such properties on the list for special supervision, but in no case is the occupier negligent in the matter. Restaurant kitchens seem to be specially attractive to rats, and the occupiers must of necessity be constantly on guard against the vermin. In one such place a complete rat-proofing of the kitchen premises was carried out at a cost of several hundred pounds. The wooden floors were lifted and cement substituted. The wood lining was removed from the walls and these were cemented; all possible avenues for rats finding their way about were closed up, with satisfactory results.

Advice was requested in connection with the presence of rats in a large city warehouse. The vermin had gained access to the basement, and at great expense this part of the building was made rat-proof, but in the process the rats were evidently driven to the upper flats—a part of the building very suitable for them, as the walls were all lined, and easy access was obtained from one flat to the other. Meantime it is impossible to carry out the necessary work of reconstruction here to make the premises rat-proof, and trapping has been resorted to.



A tenement in the centre of the city was found badly infested. One householder had caught fifteen by snares made and used in a similar manner to rabbit snares. The owner was advised, but it was impossible to repair this building owing to its dilapidation, and it was represented as unfit for human habitation.

In most places the cost of rat-proofing the premises renders this means of dealing with the vermin impracticable, and other means have to be adopted. Many occupiers have standing contracts with tradesmen or professional rat catchers to make periodical raids against the vermin. A great many keep cats or dogs, while several keep a mongoose or a ferret. One large firm in town pays threepence per tail to their employees. In one case a gun is used against the vermin. All occupiers of premises report the number of rats to be diminishing, a number stating that their premises are now clear of vermin.

*Fly Nuisance.*—Previous to the year 1914 one of the precautions consisted of limewashing ashpits throughout the city, but the introduction of portable dustbins has reduced these to about five per cent. of their former number. As regards accumulations of horse manure, arrangements were made to have all the stable dung-pits in the city emptied periodically and disinfected during the summer, a useful and effective measure.

During recent years another change has taken place. The use of mechanically-driven vehicles has caused a large reduction in the number of horses, and a consequent reduction in the number of stable dung-pits. It should be mentioned, however, that the extension of the city boundaries has brought in large areas where old ashpits are still in use, and the ashbin shelters in many of the older parts of the town have degenerated into what are little better than ashpits. A suggestion has therefore been made that it may be necessary to revert, in part at least, to the old method of dealing with such places—limewashing twice or three times annually.

The number of dung-pits sprayed during the season was 18,745. In this work 260 gallons of disinfectant were used. The total cost amounted to £473 18s. 11d., or roughly sixpence per pit.

*Regulated Houses: Ticketed Houses.*—There are at present 2,615 ticketed houses on the register, a decrease of 120 houses from last year. This decrease is mainly caused by slum clearance operations. During the night 12,447 visits were made, and 1,474 houses were found to be overcrowded. This is a considerable decrease from last year—9·94 per cent. against 12·13 per cent. last year. Visits numbering 6,067 were made to one-apartment houses, and 834 were found to be overcrowded. In 10 cases the overcrowding was caused by the keeping of lodgers. Visits were made to 6,241 two-apartment houses, 622 cases of overcrowding being found. In 64 cases the overcrowding was partly or wholly due to lodgers. 139 visits were paid to three-apartment houses, and 18 cases of overcrowding were found,

in five cases the overcrowding being due to lodgers. Other visits made during the night included 2,208 to farmed-out houses, 40 to houses let-in-lodgings, 66 to common lodging houses, and 63 to seamen's boarding houses. No overcrowding was found in those houses.

*Houses Let-in-Lodgings.*—At the present time there are few houses let-in-lodgings on the register. The main advantage in registering such a house is the power of supervision provided in the bye-laws with regard to overcrowding. It is mainly those houses likely to be overcrowded which are registered, and in two such houses special supervision has been found necessary. They are occupied by Indian pedlars; the principal tenants are themselves natives of India, and neither they nor their lodgers are accustomed to western ways of living. They seem to have little regard for cleanliness, ventilation, &c.; and it is somewhat difficult to get them to understand the requirements. The Asiatic Home would be the best place of residence for these men, but they are not seamen, and the proprietors of the home in the Queen's Dock refuse to accommodate them.

*Farmed-out Houses.*—There are 447 registered farmed-out houses. This class of house is not so fully nor permanently occupied as in former years. During the day 1,395 visits were made to those houses, and 2,227 during the night. In 320 instances contraventions of the bye-laws were notified to the owners and keepers. It will be seen from those figures that strict supervision was kept over this class of habitation. In no case was it found necessary to institute court proceedings. It is reported by the inspectors that occupiers of farmed-out houses, who are anxious to obtain houses of their own, have now less difficulty in obtaining accommodation. Several families have removed into monthly rented houses; some have made good; others have not. A monthly rent seems to be more difficult for them than the paying of a sum nightly or weekly. Some who had obtained houses of their own drifted back to the farmed-out house on this account.

*Common Lodging Houses.*—There are 23 common lodging houses in this division, including 10 registered as Seamen's boarding houses. After repeated warnings to the keeper, it was found necessary to advise the Committee to refuse registration of a small house for females in Trongate, and a few months later another small lodging house for females at the same address was closed, the whole property being now used for business purposes. In former reports, the elimination of the smaller lodging house was commented upon. The removal of those two houses brings this process nearer completion, and there are now only three small lodging houses on the register.

Seamen's boarding houses seem to be disappearing from Glasgow. Most of these houses formerly occupied by seamen and registered for such could now be registered as houses let-in-lodgings or farmed-out

houses. They are almost all let to families or non-seagoing men. The business of supplying shore lodgings for seamen whose ships are laid up for a few days is apparently being transferred gradually to the lower reaches of the harbour—Clydebank, Dalmuir, &c. How many seamen frequent common lodging houses is a matter of doubt. As regards ships registered in other ports than Glasgow, which are laid up for repair or some other reason, two-thirds or so of the crew who are not required to stand by the ship find accommodation in common lodging houses. Men employed on ships registered in Glasgow are largely domiciled in the city.

The Sailors' Home in the Broomielaw is much more patronised than it was a few years ago. It is well managed, and there is accommodation for about 120 persons in three classes—officers, petty officers and seamen. These three classes have separate dining and recreation rooms. The seamen are quartered in cubicles, but the others are accommodated in single bedrooms for the most part. All nationalities (except lascars) are accommodated, but 85 per cent. of the patrons are British. Many of the British sailors are men whose homes are in the Highlands and islands. The foreign sailors are often sent to the home by shipping companies and consuls. The Sailors' Home is not sufficiently advertised or known amongst the sea-going fraternity. The Glasgow Sailors' Home for lascars is situated at the Queen's Dock. It is under the same excellent management.

WILLIAM ROY,  
*Divisional Sanitary Inspector.*

March, 1930.

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#### NORTHERN DIVISION.

*Nuisances.*—The nuisances dealt with numbered 12,882. Over 5,000 of that total consisted of “drains choked or defective,” and these were for the most part chokages of the disconnecting traps between waste drains and soil drains. Whatever argument there may be in favour of the system of drainage of which these traps are a part, there is no doubt it has the serious defect of being the cause of a large amount of nuisance. In the plan of drainage followed in housing schemes, these traps have no place, and nuisance from choked drains is comparatively rare.

The cold spell in the month of February was the worst for many years, and one of its effects was an unprecedented number of burst pipes, frozen cisterns, &c. In many cases houses were flooded, and much discomfort and no doubt a good deal of illness were caused.

Inspection of cisterns for dietetic water-supply was made, and following the issue of notices 840 were cleansed. In 53 instances cisterns were discovered without proper covers, and after representation to the owners concerned these were provided.

*Drainage.*—Supervision and testing of drainage in connection with housing schemes engaged a considerable part of the time of the inspectors. In all 11 separate schemes were in progress, and 1,573 applications of the smoke-test were necessary. The test was also applied to the drainage of 281 tenements, which, for various reasons, were believed to be defective, and of that number 257 were found to be imperfect. Necessary renewals or repairs were thereafter made. Meetings with owners and others interested were attended for the purpose of arranging as to the installation of sanitary fittings, alterations to drainage, &c.

*Sanitary Conveniences.*—The following is a statement with regard to the number of common water-closets, privies, &c., as at 31st December, 1929:—

Privies,	...	...	...	...	...	...	212
Earth-closets,	...	...	...	...	...	...	—
Privy-middens,	...	...	...	...	...	...	40
Water-closets serving two tenants,	...	...	...	...	...	...	1,600
"    "    three    "	...	...	...	...	...	...	5,751
"    "    four    "	...	...	...	...	...	...	2,137
"    "    five    "    or more,	...	...	...	...	...	...	481
Dry-closets serving one tenant,	...	...	...	...	...	...	55
"    "    two tenants,	...	...	...	...	...	...	35
"    "    three    "	...	...	...	...	...	...	26
"    "    four    "	...	...	...	...	...	...	4
"    "    five    "	...	...	...	...	...	...	4
Privy-middens serving one tenant,	...	...	...	...	...	...	12
"    "    two tenants,	...	...	...	...	...	...	10
"    "    three    "	...	...	...	...	...	...	2
"    "    four    "	...	...	...	...	...	...	—
"    "    five    "	...	...	...	...	...	...	16
Ashpits	...	...	...	...	...	...	6
"    "    two    "	...	...	...	...	...	...	5
"    "    three    "	...	...	...	...	...	...	3
"    "    four    "	...	...	...	...	...	...	414
"    "    five    "    or more,	...	...	...	...	...	...	
Houses without water-supply or sink inside—							
One-apartment,	...	...	...	...	...	...	282
Two-    "	...	...	...	...	...	...	107
Three-    "	...	...	...	...	...	...	8

The reduction in the number of common water-closets, &c., effected during the year was mostly due to slum clearance operations.

*Overcrowding.*—There were at the end of the year 5,357 ticketed houses, and the results of inspections of these made by the night inspectors revealed no important difference in the number of overcrowded houses, as compared with recent years.

With regard to overcrowding generally, there is ample evidence that it is still very prevalent, and that many families, especially in the smaller houses, are living under most unsatisfactory conditions. The following are examples of the most grossly overcrowded houses



that have come under notice recently. Conditions in such houses may be more easily imagined than described.

Size of house.	Inmates.
One-apartment, ... (1) Father and Mother.	$\left. \begin{array}{l} \text{Sons—17, 13, 3 and 1 years, ...} \\ \text{Daughters—19, 13, 10 and 6 years, ...} \end{array} \right\} = 10$
„ ... (2) Father and Mother, ...	
„ ... (3) Father and Mother, ...	$\left. \begin{array}{l} \text{Sons—12, 10, 8, 6, 3, 3 and 2 years, ...} \\ \text{Daughters—14 and } \frac{1}{2} \text{ years, ...} \end{array} \right\} = 11$
„ ... (4) Father and Mother, ...	
Two-apartments, ... (5) Father and Mother, ...	$\left. \begin{array}{l} \text{Sons—16, 14, 11 and 5 years, ...} \\ \text{Daughters—15, 9, 7, 3 and 1 years, ...} \end{array} \right\} = 11$
„ ... (6) Father and Mother, ...	
„ ... (7) Father and Mother, ...	$\left. \begin{array}{l} \text{Sons—28, 18, 16, 15, 13, 9 and 7 years, ...} \\ \text{Daughters—25, 23, 11 and 5 years, ...} \end{array} \right\} = 13$
„ ... (8) Father and Mother, ...	
„ ... (9) Father and Mother, ...	$\left. \begin{array}{l} \text{Sons—25, 19, 12, 11 and 3 years, ...} \\ \text{Daughters—24, 22, 17, 14, 9 and 7 years, ...} \end{array} \right\} = 13$
„ ... (10) Father and Mother, ...	
„ ... (11) Father and Mother, ...	$\left. \begin{array}{l} \text{Sons—25, 23, 20, 14, 6 and 4 years, ...} \\ \text{Daughters—26, 21, 18, 16, 13 and 9 years, ...} \end{array} \right\} = 14$
„ ... (12) Father and Mother, ...	

With a view to gauging the extent of overcrowding in single-apartment houses, a special enquiry was recently made. There are in this division 11,000 houses of one apartment, most of which are occupied by families in which there are children, and to obtain a figure that would fairly represent the percentage of houses overcrowded, 1,090 houses—ticketed and unticketed—were taken at random in different localities, and the number of inmates in each noted. The standard of overcrowding assumed was three persons per room, and sex separation at ten years of age, and the annexed table gives particulars as to the occupancy of the houses reported on.

Number of Houses reported on.	Number overcrowded.	Total number of Persons in the overcrowded Houses.	Number of Children in the overcrowded Houses.		
			Under 10.	Over 10.	Total.
1,090	533	2,521	1,080	425	1,505
	or 49 per cent.	or an average of 4·7.			

#### DISTRIBUTION OF FAMILIES IN THE 533 OVERCROWDED HOUSES.

Number of Persons in family.	3	4	5	6	7	8	9	10	11
Number of families, ...	65	217	136	69	19	18	4	4	1

*Ninety-three, or nearly nine per cent. of the houses, were occupied by single persons.*

Although the information contained in the foregoing tables was obtained from a group that is comparatively small, it may be taken as fairly indicative of the conditions in single-apartment houses generally. Perhaps the most striking feature is the large number of children who are living under overcrowded conditions.



*Slum Clearance.*—Closing orders with regard to 135 dwelling-houses were made and became operative. The re-housing of the dispossessed families was, or will be, arranged. Included in the above total are 36 basement dwelling-houses, which, because of defective light, dampness, &c., were among the most grossly defective houses in the division. In the case of eight of the houses, the owner, subsequent to being called upon to execute certain repairs, declared his intention to close the houses, in terms of Section 3 of the Housing Act. Closing orders thereafter became operative.

*Repair of Dwelling-houses.*—For the purposes of Sections 3 and 8 of the Housing Act, 2,834 inspections were made. Notices were issued to owners with regard to the repair of 378 houses. The required work was thereafter carried out, but in the case of 24 of the houses the owners concerned failed to comply with the terms of the notices, and the repairs were effected by the Local Authority.

*Slum-Clearance Re-housing.*—At the end of the year there were 1,358 houses in occupation in the three schemes at Hamiltonhill, Campbell Street and Germiston. Regular inspections of these were made and the classification—clean, fair, and dirty—is detailed on p. 202. The nurse-inspector whose duty it is to deal with houses classified as “fair” and “dirty,” in Hamiltonhill and Campbell Street, had also the whole of the 492 occupied houses at Germiston under her supervision. This scheme, which only recently became fully occupied, is notable for the large number of tenants who have left, and the notes thereon, together with extracts from the nurse-inspector’s report, are this year incorporated in the Housing section of the report (p. 209).

While it is gratifying to note that the great majority of the tenants in these schemes are well-doing, it is disappointing that so many leave or are ejected for non-payment of rent. In many cases these families drift back to slumdom and to overcrowded conditions in small houses. One or two examples of such families may be informative.

(1) A young married couple with two children, who occupied a single apartment in a slum area, were re-housed in a two-apartment house. They occupied the house for three years, but during their occupancy were regarded by our Department as unsatisfactory tenants, and ultimately they were ejected for non-payment of rent. After ejection they took up house in a single apartment in a back land in another area scheduled for clearance. The rent of this house is 5s. per week, although being again in arrears they are at present paying 7s. per week. The family now consists of the father and mother and four children.

(2) A family consisting of husband and wife and two children—boys of ten and seven years—were re-housed from a farmed-out single-apartment house (for which they paid 10s. per week) to a two-apartment house in Germiston Scheme, the rent of which was 7s. 6d. per week. They were unsatisfactory tenants, and after six months

they were ejected for non-payment of rent. They then went to a farmed-out house for which they paid 11s. per week, and were next discovered in a single apartment in Burnside Street. Within the last three years they have lived at six different addresses.

(3) A family, consisting of husband and wife and three children, were transferred from a back land in Cowcaddens to a two-apartment house in Campbell Street Scheme. During their occupancy they were very unsatisfactory. Considerable trouble was experienced with them, and neither the house nor the children were kept as they ought to have been. After about two years they were ejected for non-payment of rent, and are now occupying an apartment behind a shop rented at 6s. 5d. per week. Other three children have been born, and the family now consists of eight persons in all.

*Occupancy of Small Houses.*—With reference to the foregoing, attention may be drawn to the recommendations of the Royal Commission on Housing with regard to the occupancy of small houses. In the case of single apartments, the recommendations are to the effect that the occupancy of such houses should be so restricted that they should be occupied only by single persons, or two adult persons of the same sex, or elderly married couples. The overcrowded condition of single-apartment houses is one of the most serious aspects of the whole housing problem, and it would appear to be worth while to consider whether the time has not come when some attempt could be made to give effect to the recommendations referred to, even if meantime it were found practicable to regulate the occupancy of the one-apartment house to only a limited extent. It is suggested, therefore, that consideration should now be given to the question of the desirability of obtaining power to restrict the occupancy of single-apartment houses which become vacant after a given date, so that they should not again be occupied by families in which there are children. Such a restriction would not affect families at present in occupation, but it would interpose a barrier to such families as those referred to above going back to overcrowded single apartments, and would also prevent incoming families to the City taking up their abode in houses of one apartment.

Regulation of the occupancy of two apartment houses—also referred to in the report of the Commission—is also desirable, and would be necessary, if the occupancy of single-apartments were limited as suggested, in order to deal with any tendency to increased overcrowding of the two-apartment houses that might arise.

*Offensive Trades.*—Two applications were made in terms of Section 32 of the Public Health Act for sanction to establish offensive trades. One of these was by a soap boiler and the other by a tallow melter. The necessary sanctions were granted—in the case of the soap boiler after appeal to the Department of Health. The number of offensive trades now carried on in the division is 15.

*Rag Flock Act.*—Nine samples of rag flock were submitted for examination, and all of them were found to conform to the requirements of the Rag Flock Act. The average result was 12.3 parts of chlorine per 100,000 parts of rag flock.

*Workshops.*—There were on the register at the end of the year 496 workshops. During the year 1,698 visits were made, and it was found necessary to notify 51 occupiers with regard to the lime-washing of their premises. Other insanitary conditions also received attention.

*Bakehouses.*—Thirty-three notices—29 referring to want of cleanliness and four to other nuisances—were issued, and the required cleansing, &c., thereafter carried out. There are 84 bakehouses on the register, and 292 inspections of these were made.

*Common Lodging Houses.*—The seven common lodging houses were regularly supervised, and no serious infringement of the bye-laws was discovered. The houses are well conducted.

*House-to-house Visitation, &c.*—The work of the female inspectors includes the examination of school children suspected to be verminous or dirty; house-to-house visitation in special areas; supervision of home conditions in slum clearance re-housing schemes; and inspection of workshops in which females only are employed.

During the year 383 visits were made to schools, and of the 4,749 children examined 114 were found to be infested with vermin; 1,340 were slightly verminous; and 367 dirty but not verminous. Inspections of the home conditions of the affected children were made, and in 62 instances the houses were found to be dirty and 36 beds required cleansing. In 103 instances written notices were issued in order to secure the necessary cleansing.

In the course of ordinary house-to-house visitation, 431 houses and 81 beds were discovered in a dirty condition. In only one case did we meet with an absolute refusal to comply with the terms of the notice served, and court proceedings resulted in the recalcitrant being fined 20s.

Visits numbering 9,075 were made to houses in the various re-housing schemes, and 261 houses were found in a dirty condition. These were subsequently cleansed.

*General.*—The limewashing of staircases; cleansing of closes and stairs; operations for the suppression of flies; action taken with regard to rat destruction and other routine work carried out do not call for special comment. Details are to be found in the appendix.

J. H. PATTERSON,  
Divisional Sanitary Inspector.

February, 1930.

## EASTERN DIVISION.

*Nuisances.*—The inspections made for the discovery and removal of nuisances were 240,226. The nuisances removed or abated were 16,450, being an increase of 4,125 over last year, and were in the majority of cases similar in nature to those experienced in populous districts.

Objectionable smells arising from the industries in the division were not uncommon, and efforts made to mitigate these nuisances were satisfactory. Such businesses as gas and chemical works, and what are usually described as offensive trades, are but a few which give rise to nuisance, particularly (1) when there is a mechanical breakdown, (2) when there is a dislocation of the transport services necessitating the holding up of offensive material in transit, and (3) now and again from the abuse or misuse of plant for the prevention of escaping effluvia. In the last-mentioned connection the Sanitary Inspector of an adjoining district outwith the City was communicated with on two occasions regarding odours from premises in his area; and, while observations are still being taken within the affected districts of the city, it would appear that suitable action has been taken as the conditions have been improved.

Two complaints of smells resembling coal gas were investigated. In each case the gas fumes were experienced in a ground flat house facing the street and under the kitchen sink. Drains are usually suspected when smells are at, or near, a kitchen sink; but in these cases the drains on examination were found to be quite sound, and when opened no smells of the nature complained of were discovered. While pursuing the investigations, in collaboration with the Gas Department, a leaking gas main about 50 yards distant from one of the complainers' houses was discovered. When the defect was made good the smells ceased. In the other case the cause of the smell was located at some considerable distance from the neighbourhood in which it was experienced, and was caused by a small privately-owned gas plant inadvertently discharging by-products into the public sewer. As the drains of the property in which the complainer's house was situated were tested and no defects found, it can only be conjectured that the fumes escaped from the sewer or some defective branch connected with it, eventually finding their way through the soil to the affected house.

There is possibly a greater tendency for complaints of this nature now than formerly, particularly in ground flat houses of the old order, where the sites are more likely to be unpaved. The reason is that escaping gases from sewers and gas mains are denied all vertical outlets, in consequence of the more impervious material with which our modern streets and footpaths are now paved, and may travel laterally for a considerable distance, following the line of least resistance, eventually percolating through the unpaved sites of dwelling-houses or other structures. The frequency with which the danger of gas



poisoning has been brought to the notice of the public no doubt prompted those concerned in the cases I have above referred to, to report the matter at once, and by doing so they probably averted what might have had serious consequences.

What might be described as the most serious and disgusting nuisance met with in tenement property is the choked water-closet. This convenience in the poorer districts is used in common by several tenants, and is often subjected to much abuse. The lock on the compartment door is either broken or so easily manipulated that children and others, not responsible for the cleanliness of the convenience, are not too particular in the manner in which it is used. The number of these conveniences used in common by two or more families, while still considerable, is gradually being reduced. It is gratifying to record that, in the various re-housing schemes, some of which have now been occupied for upwards of five years, a choked water-closet is practically an unknown occurrence, and choked drains are negligible. Past experience has shown that with a water-closet in each house more care is taken of it, and the readiness with which its abuse can be detected is sufficient reason for its being kept clean and in good order.

The cleansing of closes and stairs, particularly in properties where there are about six tenants on each stair, requires considerable attention. It has been noticed that so long as the officers are observed by the tenants inspecting the closes and stairs, so long is the regular cleansing carried on, but should the call of other duties cause a temporary cessation of the visitations the cleansing in some cases lapses. During the year, 1,480 rotation cards for regulating the washing of closes, stairs, and water-closets used in common were issued to tenants who could not agree amongst themselves as to their regular turns of cleansing, and in all cases the rotations were observed.

As the result of careless frequenters of the various second-hand goods' markets depositing litter, such as waste paper, banana and orange skins, on the adjoining closes and back courts, these places present a deplorable condition at the end of each week. The occupiers of the market grounds remove the litter within their own premises, but a considerable quantity is usually to be found in out of the way corners in back courts and common closes, where it remains from Saturday to Monday, when cleansing operations restart. In an effort to have this type of nuisance discontinued, the occupiers of the markets were asked to assist, and the first step taken was to provide boxes or bins at suitable points in which litter might be deposited. Bills or placards on the disposal of litter were next placed in prominent positions, so that the public could read them. The result so far may not be satisfactory, as the frequenters of these markets are slow to adopt the more hygienic means suggested for the disposal of their litter.



As an outcome of the Department's suggestion to encourage cleanliness in this direction, the occupier of one of the markets paved a large portion of his ground with granolithic, and intends to pave the entire area, which, when completed, will be a considerable improvement,

From a large collection of offensive water in a ditch at a railway siding and adjoining a public school, smells of an objectionable nature were experienced. In the siding the water was fouled by liquid from wagons containing manure and other waste material in a sodden condition. During warm weather the nuisance warranted action being taken for its removal, which was ultimately accomplished by the introduction of a drain connected to a near-by sewer.

A serious flooding took place in the Parkhead district about the end of June, due to a cloudburst. Several houses and business premises were flooded. Some of the dwelling-house tenants had to seek temporary accommodation elsewhere until the water subsided. Amongst those who suffered the worst effects of the storm were the ground-flat tenants of a property included in the Glasgow Improvement Scheme, 1928. The area affected is low-lying, and therefore collects during a heavy rainfall a considerable quantity of water; and for that reason additional gully traps were placed some years ago in the streets of the area. On this occasion it appears that these traps were heavily taxed while the storm was at its height, but the water quickly drained off as the storm abated. Factors of property affected by the flooding were asked to remove water or other offensive matter which may have collected on the under floor spaces of the ground flat houses. In all cases the request was promptly complied with.

*Drainage.*—The smoke-test was applied on 779 occasions to the drains and plumber work of both old and new properties. The increased activity in the construction of dwelling-houses during the year added to the work considerably. In all cases where defects were discovered, the repairs were duly carried out. The practice of consulting the Department on drainage and plumbing arrangements of old and new buildings, prior to the commencement of the work, is to be commended, as it obviates misunderstanding on the part of tradesmen and others, and probably expensive alterations, should the completed work not be in accordance with the regulations.

*Housing.*—Five tenements, which were considered dangerous buildings, were demolished by Order of the Dean of Guild, and some of the 35 displaced tenants were re-housed by the City Improvements Department. A further reduction of housing accommodation was caused by the demolition or the taking over of 40 dwelling-houses for the purpose of extending business premises.

The "Intermediate" type of house has now made its appearance in the east end, and a large number will be ready for occupancy early

in 1930. The names and addresses, together with the incomes of 148 tenants whose houses were overcrowded, were forwarded during the year to the City Improvements Department, in the hope that they might be considered suitable tenants for these houses. Prior to the erection of "Intermediate" houses, tenants of the smaller class of houses situated outwith the scope of the various Improvement Schemes in the east end of the City have had few opportunities to relieve their overcrowded conditions, having had to depend on the slow decanting process which takes place as a few houses become vacant from time to time. It would appear that during the year there were more houses available for letting purposes than formerly, but in most cases the houses were of three apartments and upwards. These empty houses, however, permitted of a movement of tenants which would eventually affect those in a lower housing stratum.

Particulars have been collected of 1,751 houses situated in selected streets in each ward where overcrowding was likely to be at its peak, and the intention is to revisit the overcrowded houses contained in that number when the "Intermediate" houses have become occupied, so that any change which may have taken place towards a diminution of overcrowding in the smaller houses, due to decantation, can be measured.

The following table gives some information about the 1,751 houses referred to, of which 993 are of one apartment and 758 are of two apartments. Houses included in Improvement Schemes were purposely omitted for the reason that the tenants of these will be re-housed, and in the table any number exceeding three persons per room is considered excessive.

Ward.	Number and size of Houses.		Number of one apartments with three or more Persons per Room.			Number of two apartments with six or more Persons per Room.			Number of Houses with two Families.		Percentage of House-holders unemployed.	Average Weekly Income in over-crowded Houses.		
	Apts.		3	4	5 or more	6	7	8 or more	Apts.			1	Apts.	
	1	2							1	2			1	2
1	77	86	19	10	32	10	12	24	—	1	44	42/2	46/10	
2	99	68	15	22	31	13	13	15	—	7	48	32/9	45/8	
3	203	103	31	27	81	13	9	22	1	11	44	41/8	71/2	
4	143	164	24	16	40	23	15	14	—	6	49	32/11	43/-	
5	270	125	50	35	77	20	18	16	1	7	49	36/2	43/8	
6	163	183	29	21	52	30	9	32	—	6	42	36/10	45/9	
7	38	29	6	4	14	6	3	5	—	—	60	30/3	33/6	
<hr/>														
Totals,	993	758	174	135	327	115	79	128	2	38	—	—	—	

Percentage of houses overcrowded, ... ..	One apartment. 46.52	Two apartments. 27.30
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Reference to the table shows that 357, or 35 per cent. of the 993 single-apartment houses, accommodated less than three persons per house; and that 436, or 57 per cent. of the total two-apartment houses, accommodated less than three persons per room. The average weekly

income in the overcrowded houses in the respective wards is so low that few of the householders will be able to pay the rent of an "Intermediate" house. The incomes, however, are subject to trade conditions, and as almost 50 per cent. of the householders are unemployed, it is obvious that with an improvement in trade there should be a corresponding rise in incomes.

The number of lodger families in the two-apartment houses is small, being about five per cent., and may be accounted for by the existence of large families, so that few of the tenants have accommodation for lodgers.

The single apartments show the greatest extent of overcrowding, *i.e.*, 46 per cent., of which almost 33 per cent. housed five or more persons. These figures clearly indicate that the single-apartment house is extensively used by those with increasing families, and it would be a step in the right direction if the letting of such houses was confined to elderly people, or to those without families. In the division there are approximately 12,000 single-apartment, and 26,000 two-apartment houses.

*Re-Housing Schemes.*—There are now 1,286 houses occupied by tenants displaced by the demolition of property in the various Improvement Schemes. This is an increase of 144 houses since last year, and the regular inspection of the whole has been maintained. Of these 1,286 houses, 994, or 77·3 per cent., were clean; 242, or 18·8 per cent., were fairly clean; and 50, or 3·9 per cent., were so unsatisfactory as to be classified as dirty.

An unusual type of dampness was observed in one of these houses which had been occupied for about three years, and which from its nature and the untidy condition of the house, suggested condensation as a possible cause. The room affected was one in a ground flat three-apartment house of a concrete-block built tenement. The north wall of the room was next the close. On that wall, between a gas fire and the front wall of the property, there was a large patch of fungus growing on the plaster, from the skirting board diagonally towards the front wall. On examination, the damp-proof course did not appear to be at fault, and the site, which was asphalted, showed no evidence of moisture. A large portion of the affected plaster was removed, and both it and the exposed brickwork were quite dry. Only the surface of the plaster exposed to the room seemed to be affected. In the room in question three men (who were night workers) slept during the day, and as the lady of the house explained that she could not afford to pay for the gas consumed by the fire, she kept the windows and door closed during the cold weather in order to make the room comfortable for the day sleepers. In consequence, therefore, of the lack of ventilation and proper heating of the apartment, the windows were actually streaming with water, due to the products of respiration condensing on the cold surfaces of the room.

The tenant was advised to open the windows and to light the gas fire occasionally. Subsequent visits proved the theory of condensation, for while no other remedy than that of better ventilation and an occasional firing of the room was adopted, the fungus disappeared, and the affected wall has dried considerably. The fungus was composed of three species of mould, the principal one being that known as *Fusarium*, common in soil and water.

*Ticketed Houses.*—The number of these houses is gradually being reduced, owing to the demolition in the various Improvement Schemes of property where a considerable proportion of the houses were ticketed. At present there are 4,236 ticketed houses on the register, a decrease of 345 since last year. From the inspections made for the discovery of overcrowding, 13·45 per cent. were found to be housing more persons than that permitted by the cubical contents of the houses. The most serious cases of overcrowding were in single-apartment houses, in one of which each adult person had only 117 cubic feet of air space, instead of the legal standard of 400. The house contained 1,000 cubic feet, and 10 persons (8 adults, 2 children) were living in it, so that there were six adult persons in excess of the number permitted.

The percentage of overcrowding in relation to the visits paid to ticketed houses in each ward was as follows:—

Wards	1	2	3	4	5	6	7
	14·60	15·62	14·42	12·93	13·78	12·29	14·16

*Common Lodging Houses.*—The number of these houses remains the same as last year, viz., 11, of which six are for males and five for females. They were regularly visited, and, apart from a few minor contraventions of the bye-laws, such as leaking water-closet fittings, &c., were found clean and well conducted. In the majority of the houses each bed is within a cubicle. A few have no cubicles, and in such cases the beds are situated in positions close to the walls of large dormitories. This latter form of sleeping accommodation permits of better ventilation and lighting, in consequence of the absence of obstructive partitions, but it has the disadvantage that each lodger dresses or undresses in full view of the lodgers within the dormitory. Two of the houses have still a few beds on the "bunk" principle, that is to say, while each bed is within a separate cubicle the beds are in series of twos—one above the other. It is impossible for sunshine to reach the lower beds in such cases, which are in consequence very dark and ill-ventilated. A gradual reconditioning of these "bunks" to the cubicle principle has been going on, and it is hoped that before long they will be a thing of the past.

*Farmed-out Houses and Houses Let-in-Lodgings.*—These houses were inspected regularly, particular attention being paid to the provision and maintenance of the necessary furniture and furnishings in the former type of house, as prescribed by the bye-laws. While there



was a slight increase in the number of farmed-out houses, the number of those let-in-lodgings has been decreasing, due to the removal of tenants of registered houses, and to the fact that no new houses occupied by members of more than one family are being registered meantime owing to the housing shortage. No overcrowding was discovered in any of these houses, but irregularities were successfully dealt with in farmed-out houses, without recourse to legal proceedings.

*Improvement Schemes.*—A scheme is being prepared in the Calton area dealing with about 1,300 houses. The area, which is very much congested with buildings, contains many very old houses which have passed their state of usefulness. In the majority of the properties the usual defects associated with slum property exist. A large number of the farmed-out houses in the division are within the area. The rehousing of the tenants in approved schemes is being expeditiously carried on.

*Dirty Houses.*—Six hundred and fifty-two notices were served on householders regarding the dirty condition of their houses and bedding. All, with the exception of two householders, complied with the notices served on them, and the two who did not comply were convicted and fined at the Police Court,

*Housing Repairs.*—Repairs of various kinds were carried out in 356 houses after notices had been issued on the owners or factors, and most of the work was completed by the end of the year.

*Offensive Trades.*—The number of offensive trades is 43, being a reduction of one since last year. The reduction is due to the occupiers of a tannery having ceased to continue their business for a period of over one year, and in consequence the licence lapses according to the provisions of the Public Health (Scotland) Act, 1897.

Thirty-six notices were issued regarding defects in plant which were likely to create nuisances, and all were duly attended to. Persistent complaints were made for a few weeks during the autumn regarding escaping effluvia from a tallow melter's business, and for a time nothing could be discovered to account for the complaints. Eventually the premises were visited daily, and as a result it was found that the method of rendering the effluvia innocuous was unsatisfactory. In this case the effluvia from the various tallow boilers was discharged into an underground cesspool in which the vapours were condensed with the assistance of a cold water spray, but the shaft conveying the vapours had somehow become choked and was inoperative. This condition could only be ascertained when boiling was in process, and on the attention of the person responsible being directed to the matter, the defect was at once remedied. In order, however, to improve the premises further, a new vertical boiler for



tallow melting was installed, and the shaft for the conveyance of effluvia to the condenser was re-erected to obviate some of the angles it formerly had, and which were in a large measure the cause of the chokage.

A number of the offensive trades which were at one time on the outskirts of the city are now, with the present activities in house construction, no longer isolated, and therefore require more rigid supervision than formerly. Premises at Croft Street, in which the businesses of tallow melting, bone boiling, and manure manufacturing were carried on, were taken over by a new company, who made application to the Local Authority for sanction to enlarge the premises. The applicants were refused sanction, but the Department of Health sustained the subsequent appeal. The plant to be installed for the rendering of tallow from fats and bones is to be more modern than that formerly used, and is calculated to reduce smells to a minimum.

*Tents, Vans, Sheds, and similar structures, used for Human Habitation.*—The population of these structures has been slightly reduced, and a further reduction seems probable when the provisions of the Glasgow Corporation Order Confirmation Act, 1929, are in full operation. In the Act, power is given to the Corporation to make additional bye-laws dealing principally with the spacing of the structures, and the lighting of the ground, and while Bye-laws for these purposes have been framed, they are not yet confirmed by the necessary authority.

By the Corporation's action in purchasing the ground at Vinegar-hill for a children's playground, the van colony so long associated with that place, and which in a large measure was responsible for the obtaining of further power to deal with the problem in general, will disappear. One application, in terms of the new Act, for the consent of the Corporation to let ground for the purpose of accommodating showmen's habitable vans was refused. For various contraventions of the bye-laws, and nuisances discovered, 106 notices were issued. The notices were all attended to.

*Burial Grounds.*—The burial grounds were inspected frequently to see that the bye-laws relative to such places were being complied with. The Superintendent of one Cemetery was severely reprimanded for an infringement of the Regulations, and has since given no cause for further action.

*Water Storage Cisterns.*—One hundred and fifty-five notices were served in connection with water storage cisterns, which were, on inspection, found to be dirty, uncovered or unventilated. These cisterns are only provided in cases where the altitude of the property is such as to prevent a regular supply of water direct from the main supply during the day, thus affording at all times a

regular supply to the tenants. They are inspected regularly, in order that any defect may be brought to the notice of those responsible as speedily as possible.

*Factory and Workshop Act.*—There are 492 workshops and work-places on the register. A large proportion of these are small businesses, with few employees. The nuisances dealt with numbered 68, and chiefly referred to cleansing matters. There are in addition to these workshops, &c., 94 bakehouses, of which 43 are classified as factories. These places were regularly inspected, and the provisions of the Act relating to the periodical limewashing and cleansing, together with nuisances discovered, were duly enforced where necessary, and were promptly attended to.

The number of "home workers" is 74. In all cases it was found that the work was being done in clean and tidy workrooms, and that no infectious disease existed amongst the workers or other members of the various householders.

*Rat Destruction.*—Throughout the year the work of rat destruction has been continuous, and in quite a few instances the officers have been asked to suggest means for the rat-proofing of premises. During "Rat Week" literature on the subject was distributed freely amongst those whose premises were known, or were likely to be infested, and from subsequent reports it would appear that the activities for the extermination of the vermin were most satisfactory.

*Sanitary Conveniences.*—By the demolition of slum property and dangerous buildings, water-closets serving 2, 3, 4, 5 or more tenants were reduced by 18, 6, 37, and 19 respectively. In the same connection, houses of 1, 2, and 3 apartments without internal sinks and water supplies were reduced by 21, 2, and 2 respectively. Otherwise the numbers given in last year's report relating to sanitary conveniences used in common by tenants of dwelling-houses remain the same.

Water-closet accommodation was introduced into three business premises, which formerly were without any sanitary conveniences.

A. STIRLING,  
*Divisional Sanitary Inspector.*

28th February, 1930.

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#### SOUTH-EASTERN DIVISION.

*Nuisances.*—One hundred and sixty-eight thousand, three hundred visits were made for the discovery and removal of nuisances, of which 9,427 were dealt with.

*Mosquitoes.*—The ditches at Muirend were again cleaned out in the spring to prevent the breeding of mosquitoes.

The majority of the nuisances dealt with were, as usual, due to choked drains, &c., but there were also several of a different nature, entailing a great deal of investigation, of which the following are examples.

A complaint was received from the occupier of a dwelling-house on the ground flat of a tenement that all the members of his household (himself, wife, child, and maid) were suffering from what he described as a dryness of the throat. He suggested that this was caused by petrol fumes, there being a motor garage abutting on the gable wall of the tenement. He alleged that the fumes of petrol were experienced in his house particularly during the night, and that this affection of the throat caused them to waken up with a craving for water. Inquiries made at the other houses in the tenement showed that no one else was affected, although some time later the tenant of the house immediately above the complainer's alleged that he, too, was similarly affected. Frequent visits at different times of the day to both houses failed to reveal any cause for the complaint. The drainage system of the property was smoke-tested, but no defects were revealed. The gas pipes, meters, &c., were also tested by the Corporation Gas Department, without result. A sample of air, taken on the common staircase of the tenement at 8.15 a.m., was submitted to the Public Analyst, who reported that a test for the presence of petrol vapour gave entirely negative results. Arrangements were then made to take samples of air from the bedrooms of houses of both complainers, and this was subsequently done, the samples being taken between 2.30 and 3 a.m. The Analyst reported that one of these samples was tested for the presence of carbon monoxide or other products of the incomplete combustion of petrol, and the other for the presence of petrol vapour, and that in both cases, there were entirely negative results. The garage was also frequently visited, and was at all times found to be well kept, while the Petroleum Inspector was also communicated with and requested to have two large underground petrol tanks tested for leakage. On this being done, the tanks were found to be absolutely tight. The results of these investigations were communicated to the complainers, and no recent complaints have been received. It is perhaps interesting to note that the houses of both complainers had been newly decorated (papered, painted, and varnished) and furnished, the first complainer having just returned from abroad, and the second complainer having recently been married, and it is possible that the fresh paint, &c., may have caused the throat irritation complained of.

Another nuisance dealt with arose from dust or powder issuing from the windows of a dye-works in close proximity to a school. On communicating with the manager of the dye-works, it was ascertained that the dust was coming from the "crushing" room, where

an old type of crushing machine was in use. Arrangements were, however, being made for the installation of modern machinery from which no powder would escape. In the meantime it was arranged that the windows should be covered with wet cloth to prevent as far as possible the escape of the powder. The new machinery has now been in operation for some time, and no further complaints have been received.

A complaint regarding a dairy being infested by large numbers of insects was also investigated. The source of the infestation was traced to a disused and closed up cellar underneath the dairy, which upon inspection was found to be seriously polluted with a sodden pulpy matter, which was ultimately found to be potato parings. This led to investigations at a fish and chipped potato supper shop in the vicinity, when it was found that the drains of this shop passing underground were defective and leaking, so that the potato washings and parings escaped into the cellar. The drains were at once made good, and almost  $12\frac{1}{2}$  tons of vegetable refuse were removed from the cellar, which was then treated with Irish lime. After this work was completed, no further infestation occurred.

*Drainage.*—The smoke test was applied to drainage systems on 2,411 occasions, compared with 2,340 occasions last year, thus showing a further increase. An old cesspool in connection with the drainage system of a golf clubhouse with dwelling-house attached was removed, and a properly constructed septic tank and filter was put in.

*Privies.*—There are 73 pan privies and 20 privy-middens in the division. The majority of these are in outlying areas where no sewers are available. Others are in connection with stable-yards, workshops, &c., A pan privy (two pans) was replaced by a new water-closet, and another privy, also of two pans, was removed, being no longer required.

*W.C.'s for Shops.*—At 27 shops where no satisfactory arrangement existed for the employees having the use of w.c. accommodation, new w.c.'s. were provided, or arrangements made for their having the use of existing accommodation.

## HOUSING.

*Glasgow Improvement Scheme, 1926.*—The 16 houses still standing at the beginning of the year have now been demolished.

*Repair of Houses.*—Two thousand, one hundred and fifty-seven visits and revisits were paid in connection with the putting of 516 houses into a reasonable state of repair.



*Closing Orders.*—Closing Orders were made on two houses, but these were still in occupation at the end of the year the tenants not having found alternative accommodation.

*Change of Tenancy.*—During the latter part of the year it was observed that a few houses from which the tenants had removed were not being immediately occupied, and investigations were instituted to ascertain, if possible—

- (a) whether many removals were occurring;
- (b) whether the tenants removing were going to larger houses;
- (c) what size of houses incoming tenants had come from; and
- (d) the number of houses remaining unlet.

These particulars are shown in the following tables:—

TABLE I.—OUTGOING TENANTS.

No. of Apts. in Houses vacated.	Number of apartments in House to which Tenant removed.								Totals.
	1	2	3	4	5	10 and over.	Lodgings.	Address unknown.	
1	1	3	1	—	—	—	1	1	7
2	—	8	8	2	—	—	—	7	25
3	2	3	5	3	2	—	—	27	42
4	—	—	2	2	2	—	1	14	21
5	—	—	2	—	—	—	—	15	17
6	—	—	—	—	—	—	—	4	4
7	—	—	—	—	—	—	—	3	3
10 and over,	—	—	—	—	—	—	—	3	3
Totals, ...	3	14	18	7	4	—	2	74	122

TABLE II.—INCOMING TENANTS.

No. of apts. in Houses entered by new Tenants.	Number of apartments in Houses vacated by new Tenants.									Totals.
	1	2	3	4	5	From Lodgings.	From outwith District.	Newly Married.	Remain- ing un- occupied.	
1	2	—	—	—	—	4	—	—	1	7
2	3	9	2	—	—	3	1	4	3	25
3	1	11	10	2	1	2	7	1	7	42
4	1	5	2	1	—	1	2	2	7	21
5	—	1	2	—	1	—	—	1	12	17
6	—	—	—	—	—	—	—	—	4	4
7	—	—	—	—	—	—	—	—	3	3
10	—	—	—	—	—	—	—	—	3	3
Totals, ...	7	26	16	3	2	10	10	8	40	122

There is evidence of increasing difficulty in getting the larger-sized houses in old properties let, and there is a growing tendency to sub-let the various rooms of these houses to separate families.



*New Houses.*—The number of houses built by private enterprise and which became occupied during the year was 1,081, again showing a substantial increase over the previous year's figures, which were 735. These houses are all of four apartments and upwards.

*Dangerous Buildings.*—Seven tenements, containing a total of 95 houses, were condemned by the Dean of Guild, owing to their dangerous condition. The 95 tenants of these houses have removed to other accommodation. Three of the tenements had been or were in course of being demolished at the end of the year.

*Houses Demolished.*—Seventeen houses in Pollokshaws were demolished to permit of street widening, other accommodation having been found for the tenants, and one house, a very old one at Inglefield, was also demolished to permit of the erection of the Corporation garage.

*Rent Restrictions.*—One application was received from a house factor for a report that the work specified in a certificate previously granted to a tenant had been carried out. The application was granted. Two applications from tenants for certificates of disrepair were also received, one being refused. In the other case, the tenant removed before a certificate could be issued. In addition to these, fourteen applications for certificates of disrepair were received from occupiers of farmed-out houses, but as the applicants were not tenants, their applications were, on legal advice, not entertained.

*Dirty Houses.*—The usual house-to-house visitation was carried out, the total inspections numbering 5,400. 213 houses and 57 sets of bedding which were found to be dirty were subsequently cleaned as a result of these visits.

*Verminous and Dirty Children.*—Four hundred and four schools were visited, and in these 5,819 children were inspected. The parents of 781 verminous children and 241 dirty children were subsequently dealt with. In one case the children were removed to the Reception House and cleansed, while the home was sprayed and fumigated. In all the other cases the necessary cleansing was carried out by the parents. In 54 cases, the homes of the children were found to be in a dirty condition, while 54 sets of bedding were also found dirty. The necessary cleansing was carried out on the parents being warned.

*Licensed Clubs.*—In accordance with a request by the Chief Constable, reports were made on two premises proposed to be used for club purposes, for which applications for licenses had been made.

*Piggeries.*—There are now only two piggeries in the division, and these were regularly inspected throughout the year. They were on all occasions found clean and well kept.

*Brokers' Premises.*—Fifteen applications for brokers' licences were received, and the premises were inspected and reported upon. In all cases, the premises being suitable, it was recommended that the licenses be granted.

*Workshops and Workplaces.*—One thousand, eight hundred and eighty-eight visits were paid to workshops and workplaces, of which there are 525 on the register. 27 were found dirty, one defective in ventilation, two with defective sanitary conveniences, and six with nuisances of a minor nature. Notices were served regarding these irregularities, which were subsequently remedied.

*Bakehouses.*—There are 106 bakehouses on the register, and to these 583 visits of inspection were paid. 28 were found to be dirty, and in six other nuisances were discovered. These were remedied on the attention of the occupiers being drawn to them.

*Outworkers.*—There are now 112 outworkers on the register, and to these 187 visits were paid. No irregularities were found.

*Cemeteries.*—There are seven cemeteries and graveyards in the division, and the information given in the following table was obtained from the various owners in the early part of the year. These burial places are regularly inspected and are well kept.

Name of Cemetery or Burial Ground.	Total area.	Number of Interments for past year.	Remarks.
Eastwood Old Cemetery,	7 acres, 1 rood, 27 $\frac{3}{10}$ poles.	—	This cemetery is practically disused, there being a new cemetery in the vicinity which is, however, outwith the City boundary.
Kirk Lane Graveyard, ...	1 acre, 1 rood, 37 poles.	—	This ground is also practically disused.
Southern Necropolis (Central and Eastern Sections).	10 $\frac{1}{2}$ acres, ...	148	—
Southern Necropolis (Western Section).	9 $\frac{1}{2}$ acres, ...	212	—
Cathcart Cemetery, ...	53 acres (11 acres in City).	1,010	The larger portion of this cemetery is outwith the City, but the interments given are for the whole cemetery.
Cathcart Parish Church Yard.	$\frac{1}{2}$ acre, ...	11	—
Old Cathcart Cemetery,	1 rood, 20 poles, ...	8	—

*Common Lodging Houses.*—The two common lodging houses (for males) were regularly inspected, and were found clean and well kept.

*Farmed-Out Houses.*—There were 82 farmed-out houses on the register at the end of the year, and to these 759 day visits and 305 night visits were paid. 33 irregularities were discovered, but these were remedied on the attention of the keeper being drawn to them.

*Ticketed Houses.*—Five thousand, five hundred and sixty-seven night visits were paid to these houses, of which there are 1,765 on the register. 329 houses were found to be overcrowded. The tenants of these were advised to make an effort to find larger accommodation, but in view of the difficulties still experienced in accomplishing this, no proceedings were taken against them.

*Cleansing of Closets, Stairs, &c.*—Two thousand, nine hundred and ninety-three inspections were made of closets, stairs, &c., 3,180 tenants were warned regarding their failure to have the regular cleansing attended to, and in the majority of cases this proved effective. In a number of cases, however, the warnings were not attended to, and rotation cards fixing the "turns" had to be served upon 887 tenants. In only two cases had court proceedings to be resorted to, and in one case a fine of £1 was imposed, while the other case was admonished.

*Limewashings.*—Two thousand, six hundred and sixty-four properties were inspected, and in 922 cases the walls of the common closets, staircases, &c., were found to require limewashing, and notices were accordingly served upon the owners, who subsequently had the work carried out.

*Water Storage Cisterns.*—Four hundred and seventy-four inspections of water storage cisterns were made, and 112 of these were found to be dirty or improperly covered. The owners, on being notified, had the cisterns cleaned out and properly protected.

*Destruction of Rats.*—Complaints of rat infestation at 33 properties were received, and upon the owners being communicated with, steps were at once taken to have the rats exterminated, and all "rat runs" closed up. The usual publicity campaign was carried out during rat week, and 544 pamphlets and 125 cards, giving particulars of methods of rat destruction and the making of buildings rat proof, were distributed among occupiers of premises likely to be rat infested. The investigations made at these premises indicate that the occupiers are alive to their responsibilities in the matter, and that action is taken by them immediately upon the presence of rats becoming evident.

*Fly Nuisance.*—The stable dungpits, of which there are 127, were regularly cleaned out and sprayed during the summer months, with a view to abating this nuisance.

DUNCAN THOMSON,  
*Divisional Sanitary Inspector.*

27th March, 1930.

### SOUTH-WESTERN DIVISION.

*Nuisances.*—The nuisances registered and removed numbered 17,248 and 17,078 respectively, compared with 13,867 and 13,840 in the previous year, and the inspections in connection therewith amounted to 215,563 as compared with 172,346 in 1928. In no case was it necessary to have recourse to court proceedings.

In the late summer complaints were received of atmospheric pollution (fumes, smoke and dust) over a fairly wide area, associated with two premises, one a public utility work and the other a commercial undertaking, situated about 300 yards apart. Observations were taken and 679 houses in the locality likely to be affected, visited, and statements obtained from the tenants. The evidence gathered showed that the complaints were well founded and the question was taken up with the responsible parties; negotiations were proceeding at the end of the year, when certain minor improvements had by that time been effected.

*House Drainage.*—The condition of the drainage of tenements is, on the whole, satisfactory. The testing of the drains and plumber-work of old and new houses forms an important and considerable part of the work of the Division. In the case of a farm steading in the rural area of the Division, the drainage system was reconstructed on modern lines and a septic tank installation, complete with filter, introduced. The drainage of a large isolated house in the same area was dealt with on similar lines.

*Housing Repairs.*—One thousand, four hundred and ninety-eight visits were made under the Housing Acts and 35 notices were issued regarding the want of repair. Where the owners failed to comply with the notices the repairs were carried out at their expense by the Master of Works.

A factor, having been called upon under Section 3 (1) of the Housing Act, 1925, to carry out repairs on the four ground-flat houses of a tenement property, applied to the Sheriff for ejectment decrees against the tenants on the plea that the work could not be executed with the tenants in occupation. The cases were defended and the Sanitary Inspector having been heard in support of the contention that



the repairs could be done without recourse to eviction, continued the cases for one month, in order that a working arrangement might be come to between tradesmen and tenants, with the aid of the Inspector. The repairs, which included the asphaltting of the sites, were carried out within the stipulated time, and the tenants retained their houses. This was a useful and helpful departure from precedent.

*New Houses.*—One hundred and five self-contained and semi-detached houses were erected in Cardonald, Crookston, Dumbreck, Pollokshields and Drumoyne.

*Slum Clearance.*—The Improvement Scheme of 1926, in so far as it related to this division, was finally disposed of by the demolition of the 29 houses in Newfield Lane, referred to in the previous year's report as having then been vacated. The Improvement Scheme of 1927 included 84 houses in the Division (comprising 92 families), 33 of which have been vacated, including 14 in a dismal back land at 46 Dale Street, demolished.

Of the 38 families resident in the vacated houses, 23 were accommodated in re-housing schemes, 4 exchanged with others, who were "substituted" to re-housing schemes, and 11 made their own arrangements. At the end of the year 54 families still remained to be accommodated.

*Intermediate Housing Schemes.*—The 60 houses comprising the Crossloan (Intermediate) Housing Scheme were completed and occupied during the year. Of these, 48 are houses of three apartments and 12 of four apartments, the average occupants of which were 6.5 and 8.5 respectively.

*Overcrowding.*—Overcrowding as it existed in 2,110 non-ticketed houses in Kingston, Kinning Park, Govan and Fairfield Wards was reported on in 1926, and these houses having been again surveyed in 1929, the opportunity presents itself of comparing the conditions to-day with those of three years ago. It may be recalled that the 1926 report showed that 12 per cent. of the houses contained two families, that in a group of three selected streets containing 700 houses the proportion of double occupancies reached 21 per cent. (in one street the percentage rose to 30), that gross overcrowding (apart from multiple occupancies) existed, that changes of occupancy had been comparatively frequent during the previous four years, and that unemployment played a part in the overcrowding by dual occupancies (mostly in two-apartment houses). This was particularly so in three streets, the majority of the houses in which were occupied by labourers, of whom 50 per cent. were unemployed. The houses dealt with in 1929 are identical with those surveyed in 1926, and the following table shows the number, location, and size of the houses, the number of multiple occupancies, and the population in both years:—



TABLE SHOWING THE WARD DISTRIBUTION, SIZE AND NUMBER OF THE HOUSES SURVEYED, THE NUMBER OF MULTIPLE OCCUPANCIES, AND THE POPULATION IN 1926 AND 1929.

Ward.	Number and size of Houses.				Year.	Number and size of Houses with Mult. Occupancies.				Population.			
	1 apt.	2 apts.	3 apts.	Total.		1 apt.	2 apts.	3 apts.	Total.	1 apt.	2 apts.	3 apts.	Total.
Kingston, ...	126	307	67	500	1926	—	27	20	47	456	1,543	429	2,428
					1929	—	15	7	22	439	1,390	385	2,214
Kinning Park, ...	83	98	3	184	1926	2	9	—	11	311	481	10	80
					1929	1	2	—	3	319	470	15	80
Govan, ...	220	851	97	1,168	1926	—	161	17	178	901	4,783	600	6,284
					1929	—	105	8	113	891	4,517	616	6,024
Fairfield, ...	23	191	44	258	1926	—	15	3	18	87	873	237	1,197
					1929	—	6	3	9	82	830	236	1,148
TOTAL, ...	452	1,447	211	2,110	1926	2	212	40	254	1,755	7,680	1,276	10,711
					1929	1	128	18	147	1,731	7,207	1,252	10,190
					+ or -	-1	-84	-22	-107	-24	-473	-24	-521

Of the total houses, 452 (21·5 per cent.) are of one apartment, 1,447 (68·5 per cent.) of two apartments, and 211 (10 per cent.) of three apartments, a proportion of smaller houses in excess of that in the wards as a whole. Reference to the table shows a reduction in the number of double occupancies, with a corresponding fall in the population. Double occupancies numbered 254 (12 per cent. of the total houses) in 1926 compared with 147 (7 per cent.) in 1929, a decrease of 107, equal to a decrease of 42 per cent. in double occupancies. The decrease is general; in Kingston the double occupancy rate has fallen from 9·4 per cent. in 1926 to 4·4 per cent. in 1929; in Kinning Park from 5·9 per cent. to 1·6 per cent.; in Govan from 13·5 per cent. to 9·6 per cent. and in Fairfield from 6·9 per cent. to 3·5 per cent. The Govan Ward percentage is high; it means that 1,061 families are housed in 948 houses. In one apartment houses there were 2 in 1926 as compared with one in 1929, in two-apartment houses, where they are highest, there were 212 (14·6 per cent. of such houses) as against 128 (8·8 per cent.) in 1929, and in the three apartment houses they fell from 40 to 18. As showing the fluctuations in double occupancies it may be mentioned that of the 254 houses in which these existed in 1926, 67 were still occupied in 1929 (as double occupancies) by the same tenants (almost without exception the lodger families were different), 87 were occupied by the same tenants but had reverted to single occupancies in 1929, and in the case of the remainder (100) the tenants (and lodger families) had removed and the houses were re-occupied; while the double occupancies (147) in 1929 include 41

houses occupied by new tenants; 39 which were single occupancies in 1926 (there was no change of tenancy in these cases), but which in 1929 had two families each; and, of course, those (67) in which there were double occupancies in both years above referred to. Of the houses (100) vacated of double occupancies, 11 were similarly occupied by the incoming tenants.

That gross overcrowding existed in many of the houses of one and two apartments was clearly demonstrated by the 1926 report, and while the 1929 figures show a decrease in the number of houses of varying size grossly overcrowded, the gross overcrowding, as such, is not minimised. In the one-apartment houses gross overcrowding as it existed in both years is as follows:—Of houses with six persons there were 33 in 1926 as against 27 in 1929; with seven, 25 as against 26; with eight, 10 as against 11; with nine, 6 as against 8; with ten, 2 as against 3, and of houses with eleven persons there was none in 1926 as against 3 in 1929. In two apartment houses, while the decrease in numbers is more striking, the conditions remain the same; thus, of houses with nine persons there were 70 in 1926 as compared with 52 in 1929; with ten, 43 as against 29; with eleven, 18 as against 9; with twelve, 3 as against 4; with thirteen, 4 as against 4; with fourteen, 2 as against 4; and in 1926 there was one house with 19 persons, which is without a counterpart in 1929. The following table sets out in detail the extent of the overcrowding and other relevant matter in connection therewith.

TABLE SHOWING THE NUMBER OF PERSONS OCCUPYING EACH HOUSE AND THE NUMBER OF MULTIPLE OCCUPANCIES, WHICH ARE SHOWN IN BRACKETS AND INCLUDED IN THE TOTALS, TOGETHER WITH THE AVERAGE NUMBER OF PERSONS PER ROOM AND THE AVERAGE NUMBER OF PERSONS PER FAMILY.

No. of Persons per House.	Year.	1 apartment.	2 apartments.	3 apartments.	Total.
1	1926	31	24	2	57
	1929	34	36	2	72
2	1926	71	128	8	207
	1929	92	152	7	251
3	1926	112	206	25	343
	1929	99	236 (5)	24	359 (5)
4	1926	91 (1)	249 (28)	28 (2)	368 (31)
	1929	96	243 (15)	33	372 (15)
5	1926	71	227 (35)	34 (5)	332 (40)
	1929	53	244 (20)	34	331 (20)
6	1926	33 (1)	189 (33)	27 (4)	249 (38)
	1929	27	183 (22)	28 (1)	238 (23)
7	1926	25	156 (33)	26 (6)	207 (39)
	1929	26 (1)	148 (22)	32 (3)	206 (26)
8	1926	10	123 (30)	30 (13)	163 (43)
	1929	11	104 (25)	23 (5)	138 (30)
9	1926	6	70 (27)	13 (3)	89 (30)
	1929	8	52 (8)	12 (3)	72 (11)
10	1926	2	43 (10)	10 (2)	55 (12)
	1929	3	29 (6)	7 (2)	39 (8)

No. of Persons per House.	Year.	1 apartment.	2 apartments.	3 apartments.	Total.	
11	1926	—	18 (8)	5 (2)	23 (10)	
	1929	3	9 (2)	3 (2)	15 (4)	
12	1926	—	7 (3)	2 (2)	9 (5)	
	1929	—	3	3 (1)	6 (1)	
13	1926	—	4 (3)	1 (1)	5 (4)	
	1929	—	4 (1)	3 (1)	7 (2)	
14	1926	—	2 (1)	—	2 (1)	
	1929	—	4 (2)	—	4 (2)	
19	1926	—	1 (1)	—	1 (1)	
	1929	—	—	—	—	
		1926	452 (2)	1,447 (212)	211 (40)	2,110 (254)
		1929	452 (1)	1,447 (128)	211 (18)	2,110 (147)
Average number of persons per room, ...	1926	3.882	2.653	2.003	2.689	
	1929	3.829	2.440	1.977	2.560	
Average number of persons per family,	1926	3.865	4.629	5.051	4.527	
	1929	3.829	4.575	5.467	4.514	

Clearly, many of the foregoing houses are overcrowded, but the determination of the extent of overcrowding presupposes a standard of occupancy and this at present is a matter in which there is difference in practice. Under the Public Health, Factory and Workshop, and Housing Acts, density is based on a cubic content of 400 cubic feet per adult over 10 years of age and 200 for a child under 10 years. The average content of a one-apartment house may be taken as 1,350 cubic feet, *i.e.*, air space for 3 adults, or for 2 adults and 2 children, that is to say, four persons on this standard legitimately may occupy one room. Another standard set up and one of fairly general adoption is that of two persons per room, that is to say, the person, irrespective of age, is taken as the unit, and the room, irrespective of size, as the unit of accommodation. Neither of these standards appears to be a proper one in dealing with small houses. It may be noted that the average density of the houses under review is 2.5 persons per room. If a standard of two persons per room be considered too high and the cubic space standard of four persons per room be considered too low, a middle course may be taken for purposes of comparison by adopting one of three persons per room.

Thus, on the standard of two persons per room, 78 per cent. of the houses in the one-, 54 per cent. in the two-, and 39 per cent. in the three-apartment houses are overcrowded; on a basis of three persons per room the proportions of overcrowded houses are 50 per cent., 24 per cent., and 8 per cent., in the one-, two- and three-apartment houses respectively. To re-house 453 families occupying 452 houses of one apartment on the two persons per room standard (the one-apartment house as a dwelling-house is excluded from this and the following estimates of re-housing accommodation)\* would require 323 houses of two apartments, 80 of three apartments, 36 of four apartments, 11 of five apartments and 3 of six apartments; on the basis of three persons per room, 403 houses of two apartments, 44 of three apartments, and six of four apartments. Similarly as regards

\* (Adhering strictly to the standards of two and three persons per room the families who would not be overcrowded in one room number 383 and 829 respectively.)

1,575 families residing in 1,447 two-apartment houses, 873 houses of two apartments, 410 of three, 210 of four, 67 of five, ten of six, and five of seven would be required on the two persons per room standard, compared with 1,283 two-, 254 three-, 33 four- and five five-apartment houses on the three persons per room standard. To accommodate 229 families in 211 three-apartment houses on a two persons per room standard would necessitate the provision of 87 houses of two apartments, 75 of three, 48 of four, 14 of five, three of six, and two of seven apartments, which compares with 162 houses of two, 57 of three, eight of four and two of five apartments on a standard of three persons per room.

The total accommodation required to re-house 453 families at present in 452 one-apartment houses, 1,575 families in 1,447 two apartment houses and 229 families in 221 three-apartment houses is on the standard of two persons per room as compared with three persons per room, 1,283 two-apartment houses as against 1,848, 565 three-apartment houses as against 355, 294 four-apartment houses as against 47, and 92 five-apartment houses against seven, and 16 of six and seven of seven apartment houses on the two per room standard as against none on the three per room standard.

The population shows a decrease of 521 as compared with 1926, and there are also slight decreases in the average number of persons per room, which in the case of the one-apartment houses is 3,882 in 1926 as against 3,829 in 1929, in the two-apartment houses 2,653 as against 2,490, and in the three-apartment houses 2,009 as against 1,977. In the one-apartment houses, therefore, the number of persons per room is roughly about four, in the two apartments between two and three, and in the three-apartment houses almost exactly two per room. Slight reductions fall to be recorded in the average number of persons per family in the one and two-apartment houses, the figures being 3,865 as against 3,829 in the former, and 4,629 as against 4,575 in the latter, while in the case of the three-apartment houses there is a rise from 5,051 in 1926 to 5,467 in 1929.

Reference may now conveniently be made to the group of three selected streets in Govan Ward. These three streets contain 700 houses (almost exactly one-third of the total houses (2,110) under review); their proportion of the total double occupancies rose from 57 per cent. in 1926 to 60 per cent. in 1929.

The changes in the three streets follow a similar trend to those recorded over the whole area, except, as already indicated, as regards multiple occupancies in X street, which show a comparatively slight decrease on the average. Thus gross overcrowding persists, as will be seen from the following figures relating to two-apartment houses:—Families with nine inmates, 28; ten inmates, 17; eleven inmates, three; twelve inmates, two; thirteen inmates, three; and fourteen inmates, two. Changes of occupancy occurred in 134 instances, 97 of which were changes from one house to another (45 of these were to larger houses), 34 were from lodgings, and three were by residents from outwith the City.



In table form this is as follows:—

TABLE SHOWING THE NUMBER AND SIZE OF THE HOUSES SURVEYED, THE NUMBER OF FAMILIES HOUSED, AND THE NUMBER OF HOUSES (EXCLUSIVE OF HOUSES OF ONE APARTMENT) REQUIRED TO RE-HOUSE THE FAMILIES ON THE STANDARDS OF TWO AND THREE PERSONS PER ROOM, TOGETHER WITH THE PROPORTION OF HOUSES OVERCROWDED ON THESE STANDARDS.

Size of Houses	No. of Houses	No. of Families	Number of Houses (exclusive of houses of one apartment) required to re-house the families on standards of									
			Two persons per room.					Three persons per room.				
			* (1)	† (2)	2 apts.	3 apts.	4 apts.	5 apts.	6 apts.	7 apts.	Total.	Total.
One,	452	453	(126)	(197)	323	80	36	11	3	—	453	453
Two,	1,447	1,575	(248)	(625)	873	410	210	67	10	5	1,575	1,575
Three,	211	229	(9)	(78)	87	75	48	14	3	2	229	229
TOTAL,	2,110	2,257	(383)	(900)	1,283	565	294	92	16	7	2,257	2,257

	Proportion of Houses Overcrowded.		Two persons per room.		Three persons per room.	
	One apartment, ...	Two apartments,	Three apartments,			
	...	...	...	78 per cent.	50 per cent.	
	...	...	...	54 "	24 "	
	...	...	...	39 "	8 "	

\* Families of one and two persons, whose housing needs on the standard of two persons per room would be met theoretically by one room, that is, a house of one apartment.

† Families of three and four persons, whose housing needs on the standard of two persons per room would be met theoretically by two rooms, that is, a house of two apartments.

The above combined are shown in the two-apartments heading.

‡ Families of one, two, and three persons, whose housing needs on the standard of three persons per room would be met theoretically by one room. that is, a house of one apartment.

§ Families of four, five and six persons, whose housing needs on the standard of three persons per room would be met theoretically by two rooms, that is, a house of two apartments.

The above combined are shown in the two-apartments heading.



The multiple occupancies show a decrease of 57, which gives a decrease of 39 per cent. in the three streets and 42 per cent. in the case of the total houses. The comparatively low decline in multiple occupancies in street X accounts for the increase in the proportion of multiple occupancies (from 57 per cent. to 60 per cent.) referred to above in the three streets. That 31 of the 53 double occupancies are in the same houses (and occupied by the same tenants) as in 1926 and that 11 new tenants have double occupancies points to permanence in this kind of sub-letting, which may be said to be due to a large aggregation of two-apartment houses combined with a good deal of poverty. There has been a reduction in the number of male householders unemployed, there being 25 per cent. unemployed in 1929 as against 50 per cent in 1926.

Reverting now to the whole area, changes of occupancy show a decided upward tendency, there being 473 recorded in the four years ended 1926, compared with 589 which have occurred in the three subsequent years. In 1929 the number occurring in one-apartment houses was 201, in two apartment houses 334, and 54 in houses of three apartments. The total number of changes of occupancy from one house to another (ordinary "flittings") was 194 in 1926 compared with 316 in 1929, the number of tenants formerly in lodgings and who rented houses of their own was as 185 to 191, the newly-married couples occupying houses numbered 52 in 1926 as compared with 65 in 1929, and those who came from districts outside the City fell from 29 in 1926 to 17 in 1929. Of the changes which were effected as ordinary "flittings" the number of families removing to houses larger than the vacated ones was 78 in 1926 as against 135 in 1929.

Though changes of occupancy are more frequent than might be expected under the circumstances, it is a fact that very many occupancies are of comparatively long duration, 15 and 20 years being by no means uncommon, and this is particularly to be noted in many of those houses where gross overcrowding exists. As an instance of extraordinary frequency of change of occupancy, reference may be made to a tenement of 32 one-apartment houses. The duration of occupancy in 18 cases was less than one year.

There is an aggregation of 32 single-apartment houses with populations of 23, 39, 38 and 45 on its four flats, a total of 145, equal to 4.7 persons per room, some of which contain as many as 6, 7, 9, and 11 persons each.

The assessed rental of each of these houses is £11 5s. (a very high rental for houses of this kind), 4/4 a week, the amount paid by the factors for owners' and occupiers' rates is £7 19s. 7d., 3/0.8 a week; the amount of rates and rent paid by the tenants to the factor is 6/1.1 a week. In the 1926 report the following remarks on this property appear:—"The tenants before getting possession are required to sign missives of let agreeing to accept the houses in the condition existing at entry, pay a week's rent (7/-) in advance, and

leave a deposit of £2 . . . . . all of which points, among other things, to the scarcity of houses and the eagerness with which a house is sought." In 1929 these monetary obligations remained unchanged, but the houses were not in such demand. In November, 1929, no fewer than 12 of the houses were empty and at the end of the year eight remained vacant. This, no doubt, is an exceptional case, but the fact that eight houses of one apartment remained empty for at least two months is evidence of the existence of a choice of empty one-apartment houses and of a disinclination to take an unfurnished single-apartment house where a deposit of £2 must be paid before entry and where the rent amounts to seven shillings a week, paid in advance.

*Rent Restrictions Acts.*—One application was received from a tenant for a certificate and one from a landlord for a report. The former was refused and the latter granted.

*Sanitary Accommodation.*—All tenement properties in the Division have water closet accommodation. The need for additional conveniences has in certain instances called for attention, and in this connection three new water closets were provided during the year. Seven closets on the conservancy system were replaced by water closets, and one was abolished. In the case of the latter the circumstances call for comment, inasmuch as the convenience was actually situated within a dwelling-house. The house, an old landmark in the rural part of the Division, was demolished in July last.

Water closets used in common and serving 2, 3, 4 and 5 or more tenants, number 1,088, 1,889, 1,171, and 363, which is practically the same as in 1928, the difference of 7 being accounted for by slum clearance demolition.

*Privies, Earth Closets and Privy-Middens.*—The numbers of privies and privy-middens are 17 and four respectively, being a reduction of six in the former and four in the latter, as compared with the previous year's figures. There are no earth closets.

*Dry Closets used in common.*—There are still six of these in the Division, all in the "added area," four of which serve two tenants and one each three and four tenants.

*Privy Middens used in common.*—These are, as in 1928, three in number, each serving two tenants.

*Houses without Water Supply and Sink inside the House.*—A decrease of two falls to be recorded as compared with the previous year, the number being now 28. A water supply and sink were introduced into a house consequent upon a notice under the Police Act.

*Ashpits Serving Two, Three, Four, Five or more Tenants.*—The total number of ashpits in the Division common to two or more tenants remains at 1,478. The majority of these are in the Govan area.

*Common Lodging-Houses.*—The number of common lodging-houses is four, all of which are for males. These are well conducted, only a few minor breaches of the bye-laws coming under the notice of the Department during the year. The accommodation (1,500 beds) more than meets the demands of the district in this respect.

*Farmed-out Houses.*—The 12 farmed-out houses in the Division consist of ten one-apartments and two two-apartments, all situated in one tenement. The rents charged are 12/- for the one-apartment houses and 14/- for the two-apartment houses.

*Ticketed Houses and Houses-Let-in-Lodgings.*—The number of ticketed houses is 1,381, being 785 of one apartment and 596 of two apartments. There are 12 houses-let-in-lodgings on the register. All these regulated houses are under constant supervision to insure cleanliness and to suppress overcrowding as far as this is practicable under the existing housing shortage.

*Schools.*—The sanitary condition of schools continues to be satisfactory.

*Factories and Workshops.*—Nothing of an outstanding nature falls to be recorded in connection with the factories and workshops in the Division. The number on the registers is 712, which includes 103 factory and retail bakehouses. Intimations were served upon 145 occupiers regarding dirty walls and floors, &c., and these were duly attended to.

*Dirty Houses and Bedding.*—Notices were served upon 72 householders whose houses were not in a cleanly condition, and on 64 whose bedding was dirty. In every case the notices were timeously attended to and it was not therefore necessary to have recourse to court proceedings.

*Tents and Vans.*—The vans of travelling showmen visiting the City in the usual course of their calling are the only vans in the Division used as dwelling-houses. As a general rule these are found to be kept clean. For several years a site in the Bellahouston district has been occupied during the month of July as a showground, as many as 90 vans being accommodated on the ground at a time. In view of the temporary nature of the show, pan privies were, previous to last year, accepted as suitable sanitary accommodation. Experience showed that, despite the best efforts of the promoter, the conveniences were not free from nuisance, and last July the Department pressed

for the installation of water closets for the separate use of the sexes. These were provided—four for males, with adequate urinal accommodation, and five for females—the structures and fittings being so modelled that they were easily dismantled at the end of the show, and can readily be assembled on the sites should the ground again be similarly occupied.

*Rat Destruction.*—The first week of April was duly observed as “Rat Week,” and in this connection the occupiers of all premises likely to be rat-infested were circularised. This recognised period of intensive warfare serves a very useful purpose, but it cannot be too strongly stressed that constant vigilance is necessary to combat the menace of these destructive rodents.

*Burial Grounds.*—There are two public cemeteries, owned by one company, in the Division, and these are regularly visited to ensure that the bye-laws are complied with. Seven applications for the modification of the bye-laws relative to the depths between the surface of the ground and the topmost coffin in a grave before it is closed were granted in one of the cemeteries, where, under a special bye-law such relaxation is expressly provided for on compliance with the conditions usually imposed in such cases, and two were refused.

Two interments were permitted during the year in a parish churchyard under the charge of the Corporation.

*General.*—Included among the other duties of the officers were measures for the prevention of infectious disease, attention to complaints, the supervision of offensive trades, the enforcement of the provisions of the Police Acts with regard to lime-washing of staircases, cleansing of closes and stairs, the inspection of school children suspected of being verminous, the oversight of places of public entertainment as regards their general cleanliness, the application of the Rag Flock Acts, visits to all houses in which deaths occurred, the suppression of flies at stable dungpits, the inspection of piggeries, and notification to other municipal departments of such defects as come to their knowledge and require attention. Details of these operations, none of which calls for comment, will be found in the appended table.

JAMES REID,  
*Divisional Sanitary Inspector.*

3rd April, 1930.



## APPENDIX.

TABLE I.—GLASGOW, 1929.—ESTIMATED POPULATION IN EACH MUNICIPAL WARD, ACREAGE, AND PERSONS PER ACRE.

MUNICIPAL WARDS.	POPULATION.				Acreage.	Persons per acre (including Institutions and Shipping.)
	Without Institutions and Shipping.	Institutions.	Shipping.	Total.		
1. Shettleston and Tollcross, ...	40,654	70	—	40,724	1,022	40
2. Parkhead, ...	40,061	1,289	—	41,350	883	47
3. Dalmarnock, ...	40,717	30	—	40,747	288	138
4. Calton, ...	35,446	1,918	—	37,364	333	112
5. Mile-end, ...	25,027	48	—	25,075	191	131
6. Whitevale, ...	24,281	533	—	24,814	176	141
7. Dennistoun, ...	23,442	334	—	23,776	280	85
8. Provan, ...	40,287	732	—	41,019	1,284	32
9. Cowlairs, ...	24,448	2,067	—	26,515	456	58
10. Springburn, ...	23,005	2,924	—	25,929	2,261	12
11. Townhead, ...	27,836	1,696	—	29,532	175	169
12. Exchange, ...	15,631	2,379	—	18,010	289	62
13. Blythwood, ...	12,933	1,951	75	14,959	242	62
14. Anderston, ...	27,771	1,031	1,851	30,653	422	73
15. Sandyford, ...	21,641	471	—	22,112	152	145
16. Park, ...	21,866	216	—	22,082	272	81
17. Cowcaddens, ...	38,569	639	9	39,217	488	80
18. Woodside, ...	36,544	992	—	37,536	170	221
19. Ruchill, ...	34,466	1,114	2	35,582	1,766	20
20. North Kelvin, ...	23,800	17	—	23,817	146	163
21. Maryhill, ...	26,044	1,079	—	27,123	1,391	19
22. Kelvinside, ...	23,619	1,089	—	24,708	1,127	22
23. Partick (East), ...	30,397	1,172	—	31,569	268	118
24. „ (West), ...	27,227	94	152	27,473	357	77
25. Whiteinch, ...	51,263	750	12	52,025	2,696	19
26. Hutchesontown, ...	42,451	10	—	42,461	389	109
27. Gorbals, ...	49,449	744	—	50,193	252	199
28. Kingston, ...	32,473	186	172	32,831	285	115
29. Kinning Park, ...	38,335	497	491	39,323	379	104
30. Govan, ...	38,656	342	13	39,011	529	74
31. Fairfield, ...	33,621	2,071	14	35,706	1,402	25
32. Pollokshields, ...	29,972	1,904	—	31,876	4,678	7
33. Camphill, ...	21,541	119	—	21,660	366	59
34. Pollokshaws, ...	23,201	—	—	23,201	1,847	13
35. Govanhill, ...	35,423	241	—	35,664	365	98
36. Langside, ...	18,909	784	—	19,693	557	35
37. Cathcart, ...	25,390	—	—	25,390	1,327	19
City, ...	1,126,396	31,533	2,791	1,160,720	29,511	39

Actual Increase, ... .. 13,612



TABLE II.—GLASGOW, 1929.—INHABITED AND UNOCCUPIED HOUSES  
IN EACH MUNICIPAL WARD.

MUNICIPAL WARDS.	INHABITED HOUSES. *				Empty Houses
	1929.	1928.	Decrease.	Increase.	
1. Shettleston and Tollcross,	8,389	8,032	—	357	12
2. Parkhead, ... ..	8,707	8,731	24	—	10
3. Dalmarnock, ... ..	8,859	9,065	206	—	13
4. Calton, ... ..	8,134	8,195	61	—	36
5. Mile-end, ... ..	5,504	5,545	41	—	18
6. Whitevale, ... ..	5,454	5,502	48	—	34
7. Dennistoun, ... ..	5,852	5,848	—	4	24
8. Provan, ... ..	8,846	7,946	—	900	33
9. Cowlairs, ... ..	5,629	5,642	13	—	7
10. Springburn, ... ..	4,931	4,594	—	337	23
11. Townhead, ... ..	6,313	6,464	151	—	56
12. Exchange, ... ..	3,679	3,864	185	—	39
13. Blythswood, ... ..	2,775	2,858	83	—	44
14. Anderston, ... ..	6,183	6,314	131	—	39
15. Sandyford, ... ..	4,766	4,820	54	—	40
16. Park, ... ..	5,105	5,199	94	—	94
17. Cowcaddens, ... ..	8,702	8,989	287	—	26
18. Woodside, ... ..	8,401	8,435	34	—	38
19. Ruchill, ... ..	7,712	7,067	—	645	26
20. North Kelvin, ... ..	5,711	5,730	19	—	31
21. Maryhill, ... ..	5,595	5,554	—	41	12
22. Kelvinside, ... ..	5,891	5,832	—	59	87
23. Partick (East), ... ..	6,889	6,909	20	—	26
24. „ (West), ... ..	6,501	6,497	—	4	11
25. Whiteinch, ... ..	11,255	10,434	—	821	36
26. Hutchesontown, ... ..	9,631	9,574	—	57	13
27. Gorbals, ... ..	10,562	10,732	170	—	84
28. Kingston, ... ..	6,944	7,026	82	—	34
29. Kinning Park, ... ..	8,503	8,463	—	40	19
30. Govan, ... ..	7,967	7,977	10	—	23
31. Fairfield, ... ..	7,346	7,336	—	10	6
32. Pollokshields, ... ..	7,305	7,253	—	52	51
33. Camphill, ... ..	5,712	5,716	4	—	24
34. Pollokshaws, ... ..	5,494	5,503	9	—	17
35. Govanhill, ... ..	8,334	8,027	—	307	6
36. Langside, ... ..	4,848	4,860	12	—	19
37. Cathcart, ... ..	6,165	4,774	—	1,391	14
CITY, ... ..	254,594	251,307	1,738	5,025	1,125

\*Includes Inhabitant Occupiers.

TABLE III.—GLASGOW.—LININGS GRANTED BY DEAN OF GUILD COURT  
IN YEARS FROM 1915 TO 1929 IN RESPECT OF HOUSES.

Year ending 31st August.	NUMBER OF APARTMENTS.						TOTAL.
	1.	2.	3.	4.	5.	6.	
1915, ...	63	156	120	32	35	48	454
1916, ...	1	—	2	—	12	1	16
1917, ...	—	—	—	—	—	—	—
1918, ...	—	64	28	—	—	—	92
1919, ...	—	—	144	78	—	—	222
1920, ...	—	12	1,239	414	214	57	1,936
1921, ...	—	—	1,176	981	240	34	2,431
1922, ...	—	—	65	99	39	31	234
1923, ...	—	680	286	205	104	46	1,321
1924, ...	—	357	991	605	745	82	2,780
1925, ...	—	504	674	111	44	61	1,394
1926, ...	—	318	4,649	967	769	93	6,796
1927, ...	—	228	2,889	1,209	802	55	5,183
1928, ...	—	132	4,184	2,238	314	17	6,885
1929, ...	—	570	1,656	1,024	124	82	3,456

TABLE IV.—ABSTRACT OF METEOROLOGICAL OBSERVATIONS TAKEN AT  
SPRINGBURN PUBLIC PARK.

MONTHS.	TEMPERATURE.			RAINFALL.		SUNSHINE.
	Highest Temperature in Shade.	Lowest Temperature in Shade.	Mean Temperature.	No. of Days.	Amount Collected in inches.	Hours.
1929.						
January, ...	50	18	33·7	12	1·28	37·6
February, ...	50	14	32·9	16	1·59	54·1
March, ...	64	20	43·3	8	0·99	113·6
April, ...	61	28	42·4	11	1·13	124·3
May, ...	73	30	50·4	16	2·72	190·8
June, ...	72	38	54·6	18	2·94	203·7
July, ...	80	42	58·9	16	3·23	159·6
August, ...	69	42	55·2	27	6·93	100·5
September, ...	72	40	55·7	19	1·70	96·3
October, ...	58	28	46·6	27	5·19	85·3
November, ...	54	23	41·5	28	6·62	30·6
December, ...	52	24	39·9	28	8·69	26·9
1917, ...	74	20	46·7	194	36·67	1,122
1918, ...	78	10	47·5	237	41·36	1,082
1919, ...	75	12	46·2	186	30·93	1,341
1920, ...	75	26	48·1	230	43·88	1,030
1921, ...	82	22	48·5	249	43·23	1,228
1922, ...	79	31	46·8	228	32·87	1,089
1923, ...	83	20	46·4	260	44·64	1,036
1924, ...	74	18	46·1	256	39·72	973
1925, ...	83	18	46·7	222	38·24	1,224
1926, ...	86	22	47·7	242	45·91	1,174
1927, ...	77	20	46·8	245	49·12	1,162
1928, ...	79	20	46·8	255	49·35	1,121
1929, ...	80	14	46·3	226	43·01	1,223

The records for years previous to 1921 were taken at Glasgow Observatory.

TABLE V.—GLASGOW.—BIRTHS AND BIRTH-RATES *per Million* IN EACH WARD, FOR THE YEAR 1929, AND NUMBER AND PERCENTAGE OF ILLEGITIMATE BIRTHS.

MUNICIPAL WARDS.	Births. 1929.	Illegitimate Births.		Birth-rate 1929.	Birth-rate 1928.
		No.	% Total Births.		
1. Shettleston and Tollcross, ...	829	51	6.2	20,392	22,327
2. Parkhead, ... ..	956	70	7.3	23,864	24,549
3. Dalmarnock, ... ..	1,077	73	6.8	26,451	28,207
4. Calton, ... ..	916	87	9.5	25,842	28,227
5. Mile-end, ... ..	722	48	6.6	28,849	28,558
6. Whitevale, ... ..	553	41	7.4	22,775	23,888
7. Dennistoun, ... ..	325	17	5.2	13,864	16,009
8. Provan, ... ..	928	53	5.7	23,035	26,007
9. Cowlairst, ... ..	448	16	3.6	18,325	19,753
10. Springburn, ... ..	495	28	5.7	21,517	20,438
11. Townhead, ... ..	558	42	7.5	20,046	19,437
12. Exchange, ... ..	378	41	10.8	24,183	26,196
13. Blythswood, ... ..	245	30	12.2	18,944	18,317
14. Anderston, ... ..	640	47	7.3	23,046	24,616
15. Sandyford, ... ..	408	40	9.8	18,853	17,958
16. Park, ... ..	207	36	17.4	9,467	10,014
17. Cowcaddens, ... ..	1,059	80	7.6	274,57	27,134
18. Woodside, ... ..	810	65	8.0	22,165	24,421
19. Ruchill, ... ..	788	55	7.0	22,863	23,810
20. North Kelvin,... ..	373	23	6.1	15,672	17,506
21. Maryhill, ... ..	519	19	3.7	19,928	22,244
22. Kelvinside, ... ..	146	8	5.4	6,181	7,913
23. Partick (East), ... ..	522	34	6.5	17,173	18,210
24. „ (West), ... ..	481	14	2.9	17,666	19,660
25. Whiteinch, ... ..	843	42	5.0	16,445	17,153
26. Hutchesontown, ... ..	1,070	66	6.2	25,206	25,501
27. Gorbals, ... ..	1,200	114	9.5	24,267	24,147
28. Kingston, ... ..	787	53	6.7	24,236	25,718
29. Kinning Park, ... ..	895	61	6.8	23,347	22,985
30. Govan, ... ..	958	52	5.4	24,783	26,588
31. Fairfield, ... ..	612	31	5.1	18,203	19,510
32. Pollokshields, ... ..	348	14	4.0	11,611	11,795
33. Camphill, ... ..	212	6	2.8	9,842	9,789
34. Pollokshaws, ... ..	306	16	5.2	13,189	15,194
35. Govanhill, ... ..	621	31	5.0	17,531	17,411
36. Langside, ... ..	192	10	5.2	10,154	11,343
37. Cathcart, ... ..	269	7	2.6	10,595	10,885
Institutions, &c. ... ..	103	29	—	—	—
CITY, ... ..	22,799	1,550	6.8	19,642	20,616

TABLE VI.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* IN EACH MUNICIPAL WARD, FOR THE YEAR 1929, AND CORRESPONDING RATES FOR 1928 AND 1927.

MUNICIPAL WARDS.	Deaths. 1929.	Death Rates.		
		1929.	1928.	1927.
1. Shettleston and Tollcross, ...	487	11,979	11,408	12,951
2. Parkhead, ... ..	596	14,877	13,121	12,923
3. Dalmarnock, ... ..	646	15,866	15,460	14,564
4. Calton, ... ..	803	22,654	19,910	17,162
5. Mile-end, ... ..	412	16,462	18,087	16,265
6. Whitevale, ... ..	376	15,485	14,945	16,134
7. Dennistoun, ... ..	295	12,584	12,679	10,630
8. Provan, ... ..	524	13,007	13,211	12,609
9. Cowlands, ... ..	328	13,416	10,285	12,141
10. Springburn, ... ..	307	13,345	10,592	11,139
1. Townhead, ... ..	439	15,771	14,560	13,928
2. Exchange, ... ..	316	20,216	17,910	18,244
3. Blythswood, ... ..	253	19,562	16,140	18,696
4. Anderston, ... ..	520	15,725	13,895	16,125
5. Sandyford, ... ..	362	16,728	15,033	15,023
6. Park, ... ..	354	16,190	13,112	14,042
7. Cowcaddens, ... ..	700	18,149	15,789	15,455
8. Woodside, ... ..	605	16,555	16,136	14,105
9. Ruchill, ... ..	508	14,739	12,380	13,364
10. North Kelvin, ... ..	322	13,529	10,470	10,338
1. Maryhill, ... ..	327	12,556	11,489	11,399
2. Kelvinside, ... ..	331	14,014	10,522	10,367
3. Partick (East), ... ..	514	16,910	14,141	13,268
4. „ (West), ... ..	385	14,140	10,841	11,654
5. Whiteinch, ... ..	522	10,183	9,976	9,508
6. Hutchesontown, ... ..	660	15,547	13,319	13,710
7. Gorbals, ... ..	913	18,463	16,762	16,185
8. Kingston, ... ..	582	17,923	16,009	16,388
9. Kinning Park, ... ..	668	17,425	14,494	13,638
10. Govan. ... ..	612	15,832	14,935	14,138
1. Fairfield, ... ..	393	11,689	11,230	10,554
2. Pollokshields, ... ..	375	12,512	11,022	10,140
3. Camphill, ... ..	298	13,834	11,413	12,064
4. Pollokshaws, ... ..	276	11,896	10,674	12,564
5. Govanhill, ... ..	447	12,619	10,669	10,976
6. Langside, ... ..	217	11,476	10,657	12,651
7. Cathcart, ... ..	259	10,201	9,817	8,778
Institutions, ... ..	810	—	—	—
Harbour, ... ..	9	—	—	—
*Inward Transfers, ... ..	9	—	—	—
CITY, ... ..	17,760	15,301	13,687	13,655

\* Inward Transfer Deaths, where information is available, are allocated against appropriate wards.





TABLE VIII.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* FROM DIFFERENT CAUSES, FOR THE YEAR 1929, AND CORRESPONDING RATES FOR 1928 AND 1927.

CAUSE OF DEATH.	DEATHS.	ANNUAL DEATH RATE PER MILLION.		
	1929.	1929.	1928.	1927.
1. Enteric Fever, ... ..	7	6	9	9
1A. Typhus Fever, ... ..	—	—	—	—
2. Smallpox, ... ..	—	—	—	—
3. Measles, ... ..	80	69	328	272
4. Scarlet Fever, ... ..	40	34	30	39
5. Whooping-cough, ... ..	253	218	332	322
6. Diphtheria, ... ..	135	116	122	100
7. Influenza, ... ..	878	756	183	180
8. Encephalitis Lethargica, ... ..	29	25	31	26
9. Meningococcal Meningitis, ... ..	152	131	59	58
1B. Erysipelas, ... ..	52	45	33	26
0. Tuberculosis of Respiratory System,...	1,025	883	832	838
1A. Tuberculous Meningitis, ... ..	152	131	140	142
1B. Abdominal Tuberculosis, ... ..	70	60	56	60
1C. Other Tuberculous Diseases, ... ..	108	93	105	99
2. Cancer (Malignant Disease), ... ..	1,477	1,272	1,247	1,328
3. Rheumatic Fever, ... ..	68	59	47	67
4. Diabetes, ... ..	136	117	90	104
5. Cerebral Hæmorrhage, etc. ... ..	1,076	927	823	897
1C. Meningitis (not Tuberculous) ... ..	54	47	58	67
1D. Other Nervous Diseases, ... ..	584	503	507	443
6. Heart Disease, ... ..	2,387	2,056	1,736	1,638
7. Arterio-sclerosis, ... ..	386	333	338	324
1E. Other Circulatory Diseases, ... ..	91	78	78	85
8. Bronchitis, ... ..	971	837	554	598
9. Pneumonia (all forms), ... ..	2,447	2,109	1,570	1,585
0. Other Respiratory Diseases, ... ..	241	208	155	181
1. Ulcer of Stomach or Duodenum, ... ..	134	115	107	85
2. Diarrhœa, etc. (under 2 years), ... ..	285	246	291	301
3. Appendicitis, ... ..	104	90	66	76
4. Cirrhosis of Liver, ... ..	44	38	31	31
5. Acute and Chronic Nephritis, ... ..	448	386	385	335
6. Puerperal Sepsis, ... ..	86	74	78	54
7. Other Diseases and Accidents of Preg- nancy and Parturition, ... ..	95	82	92	85
8. Congenital Debility and Malformation, Premature Birth, ... ..	839	723	761	773
9. } Suicide, and other Deaths from Vio- 10. } lence, ... ..	673	579	578	629
11. Other defined Diseases, ... ..	1,912	1,647	1,613	1,586
12. Causes ill-defined or unknown, ... ..	241	208	222	212
ALL CAUSES, ... ..	17,760	15,301	13,687	13,655

TABLE IX.—GLASGOW, 1929.—DEATHS FROM

CAUSE OF DEATH.	MALES.														Not Stated.
	- 1	- 2	- 5	-10	-15	-20	-25	-35	-45	-55	- 65	- 75	75+		
1. Enteric Fever, ...	—	—	1	—	—	—	—	1	—	—	1	—	—	—	
31A. Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2. Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3. Measles, ...	8	19	8	2	—	—	—	—	—	—	—	—	—	—	
4. Scarlet Fever, ...	1	3	7	3	2	—	—	1	2	1	—	—	—	—	
5. Whooping-cough, ...	47	42	28	4	—	—	—	—	—	—	—	—	—	—	
6. Diphtheria, ...	8	19	25	14	2	—	—	1	1	—	1	—	—	—	
7. Influenza, ...	20	21	9	7	5	9	13	20	43	58	73	66	58	—	
8. Encephalitis Lethargica, ...	1	—	—	—	—	1	—	1	5	3	5	—	—	—	
9. Meningococcal Meningitis, ...	40	12	11	5	5	9	5	3	1	1	—	—	—	—	
31B. Erysipelas, ...	1	—	1	—	—	—	—	2	1	3	9	6	2	—	
10. Tuberculosis of Respiratory System, ...	1	2	6	10	7	56	73	99	104	114	62	17	1	—	
11A. Tuberculous Meningitis, ...	11	13	22	8	7	10	2	1	—	—	1	—	—	—	
11B. Abdominal Tuberculosis, ...	3	6	8	7	4	2	—	4	2	3	—	2	—	—	
11C. Other Tuberculous Diseases, ...	1	4	5	4	3	11	3	10	5	3	3	4	1	—	
12. Cancer (Malignant Disease), ...	—	—	2	—	—	1	2	11	43	114	220	246	70	—	
13. Rheumatic Fever, ...	—	—	1	4	5	3	1	3	2	2	3	2	—	—	
14. Diabetes, ...	—	—	—	—	1	4	—	8	3	7	11	13	8	—	
15. Cerebral Hæmorrhage, etc., ...	3	—	—	—	1	1	2	2	4	49	116	219	114	—	
31C. Meningitis (not Tuberculous), ...	7	2	7	4	—	1	—	1	3	1	1	1	—	—	
31D. Other Nervous Diseases, ...	55	16	6	9	8	14	9	21	34	47	62	37	19	—	
16. Heart Disease, ...	2	1	2	2	11	7	15	36	69	131	283	397	215	—	
17. Arterio-sclerosis, ...	—	—	—	—	—	—	—	—	2	13	56	98	62	—	
31E. Other Circulatory Diseases, ...	—	—	—	—	—	—	—	1	5	13	25	9	5	—	
18. Bronchitis, ...	48	10	3	—	—	1	3	13	37	49	85	132	85	—	
19. Pneumonia (all forms), ...	356	266	106	20	9	14	26	56	99	142	151	112	48	—	
20. Other Respiratory Diseases, ...	12	3	4	1	—	1	2	3	10	14	12	20	19	—	
21. Ulcer of Stomach or Duodenum, ...	—	—	—	—	—	—	2	18	27	15	24	11	3	—	
22. Diarrhoea, etc. (under 2 years), ...	140	25	—	—	—	—	—	—	—	—	—	—	—	—	
23. Appendicitis, ...	—	1	2	6	8	8	2	2	13	8	5	—	3	—	
24. Cirrhosis of Liver, ...	—	—	—	—	—	—	—	—	3	11	11	7	3	—	
25. Acute and Chronic Nephritis, ...	1	—	1	3	—	5	5	13	13	39	76	55	19	—	
26. Puerperal Sepsis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
28. Congenital Debility and Malformation Premature Birth, ...	490	2	2	—	—	—	—	—	—	—	—	—	—	—	
29. Suicide, and other and } Deaths from Violence, ...	9	20	19	32	23	18	18	52	65	76	67	45	21	1	
30. } ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
31. Other Defined Diseases, ...	117	12	26	13	9	11	12	19	31	77	97	220	217	—	
32. Causes Ill-Defined or Unknown, ...	5	—	1	2	1	3	1	4	14	31	49	32	3	—	
ALL CAUSES, ...	1,387	499	313	160	111	190	196	406	641	1,025	1,509	1,751	976	1	

## DIFFERENT CAUSES IN SEXES AND AT SEVERAL AGE-PERIODS.

CAUSE OF DEATH.	FEMALES.														Total Females.	Total Both Sexes.
	- 1	- 2	- 5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75 +			
Enteric Fever, ...	—	—	—	—	—	1	—	1	—	2	—	—	—	4	7	
Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Measles, ...	14	24	4	1	—	—	—	—	—	—	—	—	—	43	80	
Scarlet Fever, ...	—	2	4	11	1	2	—	—	—	—	—	—	—	20	40	
Whooping-cough, ...	67	40	21	4	—	—	—	—	—	—	—	—	—	132	253	
Diphtheria, ...	6	10	21	24	1	1	—	—	—	1	—	—	—	64	135	
Influenza, ...	22	18	10	3	4	8	6	28	49	48	71	110	99	476	878	
Encephalitis Lethargica, ...	—	—	—	1	—	5	—	1	3	2	1	—	—	13	29	
Meningococcal Meningitis, ...	18	13	11	4	4	3	3	2	1	1	—	—	—	60	152	
Erysipelas, ...	4	—	—	—	—	—	—	2	2	6	3	6	4	27	52	
Tuberculosis of Respiratory System, ...	3	1	5	13	21	79	78	108	83	43	29	7	3	473	1,025	
Tuberculous Meningitis, ...	11	11	16	15	4	8	5	2	3	1	1	—	—	77	152	
Abdominal Tuberculosis, ...	1	3	4	5	3	4	2	2	2	—	1	2	—	29	70	
Other Tuberculous Diseases, ...	4	8	1	2	6	—	7	5	3	5	4	1	—	51	108	
Cancer (Malignant Disease), ...	—	—	2	3	—	—	5	10	87	155	193	199	114	768	1,477	
Rheumatic Fever, ...	—	—	1	4	3	5	7	6	3	5	7	1	—	42	68	
Diabetes, ...	—	—	—	—	1	3	—	3	9	8	21	26	10	81	136	
Cerebral Hæmorrhage, etc., ...	—	—	—	1	1	—	1	4	16	51	110	210	171	565	1,076	
Meningitis (not Tuberculous) ...	10	4	1	3	3	—	2	2	—	—	—	1	—	26	54	
Other Nervous Diseases, ...	40	10	7	5	4	1	8	22	18	41	37	30	24	247	584	
Heart Disease, ...	2	1	3	3	8	14	11	41	62	149	261	342	319	1,216	2,387	
Arterio-sclerosis, ...	—	—	—	—	—	—	—	1	3	6	25	49	71	155	386	
Other Circulatory Diseases, ...	2	—	—	—	—	—	—	1	4	2	11	10	3	33	91	
Bronchitis, ...	39	7	3	1	—	3	2	2	9	34	65	155	185	505	971	
Pneumonia(all forms)	260	188	89	16	12	8	9	39	67	76	98	102	78	1,042	2,447	
Other Respiratory Diseases, ...	5	3	—	1	1	1	2	3	7	17	19	28	53	140	241	
Ulcer of Stomach or Duodenum, ...	—	—	—	—	—	2	—	2	2	10	9	8	1	34	134	
Diarrhoea, etc. (under 2 years), ...	103	17	—	—	—	—	—	—	—	—	—	—	—	120	285	
Appendicitis, ...	—	—	—	6	3	4	2	4	11	8	8	—	—	46	104	
Cirrhosis of Liver, ...	—	—	—	—	—	—	—	1	—	2	2	3	1	9	44	
Acute and Chronic Nephritis, ...	2	1	—	4	5	2	1	10	28	43	55	44	23	218	448	
Puerperal Sepsis, ...	—	—	—	—	—	2	16	45	22	1	—	—	—	86	86	
Other Diseases and Accidents of Pregnancy and Parturition, ...	—	—	—	—	—	2	14	51	28	—	—	—	—	95	95	
Congenital Debility and Malformation, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Premature Birth, ...	344	1	—	—	—	—	—	—	—	—	—	—	—	345	839	
Suicide, and other Deaths from Violence, ...	9	12	17	16	6	9	5	11	13	29	28	28	24	207	673	
Other Defined Diseases, ...	77	24	17	13	6	8	12	31	57	91	109	203	403	1,051	1,912	
Causes Ill-Defined or Unknown, ...	8	1	3	2	1	—	—	2	11	20	29	16	2	95	241	
ALL CAUSES, ...	1,051	399	240	161	98	180	198	442	603	857	1,197	1,581	1,588	8,595	17,760	

TABLE X.—GLASGOW, 1929.—DEATHS OCCURRING IN INSTITUTIONS FOR THE TREATMENT OF THE SICK, NURSING HOMES, &amp;c., WITHIN THE CITY.

CAUSE OF DEATH.				Poor Law Institutions.	General Hospitals and Infirmarys.	Local Authority Hospitals.	Nursing Homes, Asylums, &c.	TOTALS.	% of all Deaths.*	Out- Tra De
1.	Enteric Fever, ...	...	...	—	1	6	—	7	100	
31A.	Typhus Fever, ...	...	...	—	—	—	—	—	—	
2.	Smallpox, ...	...	...	—	—	—	—	—	—	
3.	Measles, ...	...	...	2	—	39	—	41	51	
4.	Scarlet Fever, ...	...	...	—	1	36	—	37	92	
5.	Whooping-cough, ...	...	...	4	—	143	—	147	58	
6.	Diphtheria, ...	...	...	2	3	125	—	130	96	
7.	Influenza, ...	...	...	60	21	24	27	132	15	
8.	Encephalitis Lethargica, ...	...	...	16	—	—	1	17	63	
9.	Meningococcal Meningitis, ...	...	...	2	12	122	—	136	89	
31B.	Erysipelas, ...	...	...	3	—	39	—	42	86	
10.	Tuberculosis of Respiratory System, ...	...	...	215	19	327	12	573	58	
11A.	Tuberculous Meningitis, ...	...	...	11	27	73	—	111	75	
11B.	Abdominal Tuberculosis, ...	...	...	5	17	18	2	42	61	
11C.	Other Tuberculous Diseases, ...	...	...	21	20	24	4	69	68	
12.	Cancer (Malignant Disease), ...	...	...	277	281	10	47	615	42	
13.	Rheumatic Fever, ...	...	...	9	29	1	1	40	60	
14.	Diabetes, ...	...	...	21	31	6	4	62	48	
15.	Cerebral Hæmorrhage, etc. ...	...	...	302	82	5	25	414	40	
31C.	Meningitis (not Tuberculous), ...	...	...	5	9	7	—	21	42	
31D.	Other Nervous Diseases, ...	...	...	153	73	6	36	268	55	
16.	Heart Disease, ...	...	...	663	158	11	43	875	38	
17.	Arterio-sclerosis, ...	...	...	51	19	3	13	86	23	
31E.	Other Circulatory Diseases, ...	...	...	15	22	—	1	38	43	
18.	Bronchitis, ...	...	...	151	44	11	28	234	24	
19.	Pneumonia (all forms), ...	...	...	378	166	759	29	1,332	55	
20.	Other Respiratory Diseases, ...	...	...	40	29	7	6	82	36	
21.	Ulcer of Stomach or Duodenum, ...	...	...	12	81	—	10	103	80	
22.	Diarrhœa, etc. (under 2 years), ...	...	...	78	38	22	—	138	49	
23.	Appendicitis, ...	...	...	7	77	1	14	99	97	
24.	Cirrhosis of Liver, ...	...	...	11	9	—	2	22	52	
25.	Acute and Chronic Nephritis, ...	...	...	96	109	4	9	218	50	
26.	Puerperal Sepsis, ...	...	...	2	25	56	1	84	98	
27.	Other Diseases and Accidents of Pregnancy and Parturition, ...	...	...	9	58	3	5	75	79	
28.	Congenital Debility and Malformation, Premature Birth, ...	...	...	96	141	10	11	258	31	
29. and 30.	Suicide, and other Deaths from Violence, ...	...	...	28	344	4	1	377	62	
31.	Other Defined Diseases, ...	...	...	330	434	47	50	861	46	
32.	Causes Ill-defined or Unknown, ...	...	...	6	8	—	4	18	8	
YEAR, 1929, ...				3,081	2,388	1,949	386	7,804	45	1
YEAR, 1928, ...				2,552	2,326	1,877	417	7,172	47	1

\* These percentages are based on the number of deaths occurring in and belonging to the City.



E XI.—GLASGOW, 1929.—DEATHS OF PERSONS WITH INSTITUTIONAL OR HARBOUR ADDRESS ONLY WITHIN THE CITY, ARRANGED ACCORDING TO USUAL RESIDENCE AS REGISTERED. (OUTWARD TRANSFERS EXCLUDED.)

CAUSE OF DEATH.	Staff with Acquired Institutional Residence.	OTHER THAN STAFF.						TOTAL.
		Poor Law Institutions.	Model Lodging Houses.	Other Institutions.	Harbour.	Readmitted with Glasgow but not transferable.	Readmitted with Scotland and not transferable.	
Enteric Fever, ... ..	—	—	—	—	—	—	—	—
Typhus Fever, ... ..	—	—	—	—	—	—	—	—
Smallpox, ... ..	—	—	—	—	—	—	—	—
Measles, ... ..	—	—	1	—	—	—	—	1
Scarlet Fever, ... ..	—	—	—	—	—	—	—	—
Whooping-cough, ... ..	—	—	—	—	—	1	—	1
Diphtheria, ... ..	—	—	—	—	—	—	—	—
Influenza, ... ..	1	—	19	6	—	10	—	36
Encephalitis Lethargica, ... ..	—	—	1	—	—	—	—	1
Meningococcal Meningitis, ... ..	—	—	—	—	—	—	—	—
Erysipelas, ... ..	—	1	2	—	—	—	—	3
Tuberculosis of Respiratory System, ... ..	—	6	46	5	1	3	—	61
Tuberculous Meningitis, ... ..	1	—	—	—	—	—	—	1
Abdominal Tuberculosis, ... ..	1	—	2	—	—	—	—	3
Other Tuberculous Diseases, ... ..	—	2	1	1	—	—	—	4
Cancer (Malignant Disease), ... ..	1	3	54	8	1	—	7	74
Rheumatic Fever, ... ..	—	—	—	—	—	—	—	—
Diabetes, ... ..	1	—	—	1	—	—	—	2
Cerebral Hæmorrhage, etc., ... ..	—	2	45	18	—	—	3	68
Meningitis (not Tuberculous), ... ..	—	—	2	—	—	—	—	2
Other Nervous Diseases, ... ..	1	1	14	6	—	1	1	24
Heart Disease, ... ..	—	4	136	37	—	—	3	180
Arterio-sclerosis, ... ..	—	1	6	8	—	—	—	15
Other Circulatory Diseases, ... ..	1	—	5	1	—	—	1	8
Bronchitis, ... ..	1	3	40	8	—	—	1	53
Pneumonia (all forms), ... ..	1	11	54	14	—	—	1	81
Other Respiratory Diseases, ... ..	1	—	5	2	—	—	1	9
Cleer of Stomach or Duodenum, ... ..	—	—	1	—	—	—	2	3
Diarrhœa (under 2 years), ... ..	—	—	1	—	—	—	—	1
Appendicitis, ... ..	1	—	1	—	—	—	1	3
Cirrhosis of Liver, ... ..	—	1	1	—	1	—	—	3
Acute and Chronic Nephritis, ... ..	1	—	17	4	—	—	—	22
Puerperal Sepsis, ... ..	—	—	—	—	—	—	—	—
Other Diseases and Accidents of Pregnancy and Parturition, ... ..	—	—	—	—	—	—	—	—
Congenital Debility and Malformation, Premature Birth, ... ..	—	1	2	1	—	3	1	8
Suicide and Other Deaths from Violence, ... ..	1	—	22	—	2	—	6	31
Other Defined Diseases, ... ..	2	4	61	10	4	1	8	90
Causes Ill-defined or Unknown, ... ..	1	—	27	—	—	—	3	31
ALL CAUSES, ... ..	16	40	566	130	9	19	39	819



TABLE XII.—GLASGOW.—DEATHS UNDER 1 YEAR AND DEATH-RATES PER 1,000 BIRTHS IN EACH MUNICIPAL WARD, FOR THE YEAR 1929.

MUNICIPAL WARDS.						Deaths -1 Year.	Death Rate per 1,000 Births.		
						1929.	1929.	1928.	1927.
1.	Shettleston and Tollercross,	...	...	...	...	89	107	99	126
2.	Parkhead,	...	...	...	...	109	114	126	97
3.	Dalmarnock,	...	...	...	...	113	105	115	130
4.	Calton,	...	...	...	...	137	150	161	113
5.	Mile-end,	...	...	...	...	80	111	157	140
6.	Whitevale,	...	...	...	...	54	98	135	128
7.	Dennistoun,	...	...	...	...	26	80	101	47
8.	Provan,	...	...	...	...	94	101	108	101
9.	Cowlairs,	...	...	...	...	43	96	95	113
10.	Springburn,	...	...	...	...	62	125	94	101
11.	Townhead,	...	...	...	...	46	82	117	109
12.	Exchange,	...	...	...	...	47	124	140	135
13.	Blythwood,	...	...	...	...	38	155	131	144
14.	Anderston,	...	...	...	...	80	125	117	118
15.	Sandyford,	...	...	...	...	45	110	102	116
16.	Park,	...	...	...	...	19	92	63	74
17.	Cowcaddens,	...	...	...	...	122	115	134	121
18.	Woodside,	...	...	...	...	77	95	113	114
19.	Ruchill,	...	...	...	...	93	118	90	121
20.	North Kelvin,	...	...	...	...	40	107	74	69
21.	Maryhill,	...	...	...	...	48	92	97	96
22.	Kelvinside,	...	...	...	...	4	27	49	58
23.	Partick (East),	...	...	...	...	63	121	128	92
24.	„ (West),	...	...	...	...	42	87	79	89
25.	Whiteinch,	...	...	...	...	58	69	47	56
26.	Hutchesontown,	...	...	...	...	132	123	98	133
27.	Gorbals,	...	...	...	...	163	136	114	112
28.	Kingston,	...	...	...	...	89	113	84	124
29.	Kinning Park,	...	...	...	...	112	125	91	108
30.	Govan,	...	...	...	...	123	128	110	101
31.	Fairfield,	...	...	...	...	48	78	92	82
32.	Pollokshields,	...	...	...	...	30	86	48	12
33.	Camphill,	...	...	...	...	12	57	52	75
34.	Pollokshaws,	...	...	...	...	15	49	88	48
35.	Govanhill,	...	...	...	...	45	72	76	78
36.	Langside,	...	...	...	...	9	47	51	63
37.	Cathcart,	...	...	...	...	15	56	37	48
	Institutions,	...	...	...	...	15	—	—	—
	Harbour,	...	...	...	...	1	—	—	—
	CITY,	...	...	...	...	2,438	107	107	107

CAUSE OF DEATH.	AGE IN WEEKS.				Total - 4 weeks.	AGE IN MONTHS.												Total - 1 year.
	AGE IN WEEKS.					AGE IN MONTHS.												
	- 1	- 2	- 3	- 4		- 2	- 3	- 4	- 5	- 6	- 7	- 8	- 9	- 10	- 11	- 12		
I. CONGENITAL MALFORMATIONS,...	14	8	2	5	29	18	1	4	3	1	1	3	—	—	—	61		
II. DISEASES OF EARLY INFANCY,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	469		
(a) Congenital Debility, Solcrema,	62	12	10	8	92	18	7	6	1	—	1	—	—	—	—	132		
and Icterus, ...	194	23	17	10	244	14	6	3	—	—	1	—	—	—	—	267		
(b) Premature Birth, ...	24	3	1	2	30	2	—	—	—	—	—	—	—	—	—	30		
(c) Injury at Birth, ...	24	2	2	1	29	2	—	1	—	—	—	—	—	—	1	34		
(d) Atelectasis, ...	1	4	1	—	6	—	—	—	—	—	—	—	—	—	—	6		
(e) Others, ...	3	5	2	6	16	21	28	34	26	41	33	51	48	44	28	416		
III. DISEASES OF RESPIRATORY SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	165		
IV. DISEASES OF DIGESTIVE SYSTEM,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	140		
(a) Diarrheal, ...	1	1	2	4	7	16	18	16	16	17	13	6	9	8	6	25		
(b) Others, ...	6	4	4	1	15	11	5	4	11	7	3	1	3	2	1	65		
V. DISEASES OF NERVOUS SYSTEM,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16		
VI. TUBERCULOUS DISEASES,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11		
(a) Pulmonary Tuberculosis,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3		
(b) Tuberculous Meningitis,...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1		
(c) Abdominal Tuberculosis,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3		
(d) Other Forms, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1		
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	106		
(a) Measles, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8		
(b) Scarlet Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1		
(c) Whooping-cough, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	47		
(d) Diphtheria, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8		
(e) Erysipelas, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1		
(f) Meningococcal Meningitis,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40		
(g) Varicella, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1		
(h) Enteric Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1		
VIII. SYPHILIS, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6		
IX. OVERLAYING, ...	1	1	1	1	3	—	—	—	—	—	—	—	—	—	—	3		
X. OTHER VIOLENCE, ...	2	—	—	—	2	1	—	—	—	—	—	—	—	—	—	6		
XI. ALL OTHER CAUSES, ...	7	3	4	2	16	11	4	5	7	4	7	3	6	6	2	74		
	340	66	48	41	495	122	81	84	78	87	72	78	86	75	71	58	1,387	

TABLE XIV.—GLASGOW, 1929.—FEMALE INFANT DEATHS AT GIVEN AGES AND FROM SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.					Total — 4 weeks.	AGE IN MONTHS.											Total — 1 year.
	AGE IN WEEKS.						AGE IN MONTHS.											
	- 1	- 2	- 3	- 4	- 4	- 2	- 3	- 4	- 5	- 6	- 7	- 8	- 9	- 10	- 11	- 12		
I. CONGENITAL MALFORMATIONS,...	11	3	3	2	2	19	6	3	1	2	1	—	—	2	1	1	36	
II. DISEASES OF EARLY INFANCY,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	337	
(a) Congenital Debility, Sclerema, and	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	97	
Icterus, ... ..	44	12	6	4	66	66	9	4	9	2	1	3	2	—	—	1	199	
(b) Premature Birth, ... ..	136	29	11	8	184	184	10	3	2	—	—	—	—	—	—	—	12	
(c) Injury at Birth, ... ..	9	1	1	1	11	11	2	1	—	—	—	—	—	—	—	—	14	
(d) Atelectasis, ... ..	8	1	1	1	10	10	2	2	—	—	—	—	—	—	—	—	15	
(e) Others, ... ..	10	1	3	1	15	15	—	—	—	—	—	—	—	—	—	—	304	
III. DISEASES OF RESPIRATORY SYSTEM, ...	4	2	8	4	18	18	20	16	19	26	20	24	34	32	33	26	36	118
IV. DISEASES OF DIGESTIVE SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	103	
(a) Diarrhœal, ... ..	—	—	1	3	4	4	17	9	20	13	11	4	2	7	8	3	5	15
(b) Others, ... ..	4	2	3	—	9	9	2	1	2	3	3	5	3	2	2	1	2	50
V. DISEASES OF NERVOUS SYSTEM, ...	—	—	—	—	—	—	—	—	—	1	3	2	1	—	—	1	3	19
VI. TUBERCULOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11
(a) Pulmonary Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
(b) Tuberculous Meningitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
(c) Abdominal Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
(d) Other Forms, ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110
(a) Measles, ... ..	—	—	—	—	—	—	1	—	1	—	1	1	—	3	2	1	4	14
(b) Scarlet Fever, ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
(c) Whooping-cough, ... ..	—	—	—	—	—	—	2	4	3	3	7	3	7	6	3	12	17	67
(d) Diphtheria, ... ..	—	—	—	—	—	—	—	—	—	—	—	—	2	1	1	1	1	6
(e) Erysipelas, ... ..	—	—	—	1	1	1	1	2	1	1	2	1	4	3	1	—	2	18
(f) Meningococcal Meningitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
(g) Varicella, ... ..	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
(h) Enteric Fever, ... ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VIII. SYPHILIS, ... ..	1	—	—	—	1	1	1	1	—	—	—	—	—	—	—	—	—	3
IX. OVERLAYING, ... ..	—	—	—	—	—	—	2	1	—	—	—	—	—	—	—	—	—	3
X. OTHER VIOLENCE, ... ..	1	—	2	—	3	3	—	—	—	—	1	—	1	—	1	—	—	6
XI. ALL OTHER CAUSES, ... ..	6	1	5	3	15	15	3	3	4	8	3	7	4	4	5	4	5	65
	234	53	43	27	357	357	84	55	70	61	55	51	67	62	60	52	77	1,051

TABLE XV.—GLASGOW, 1927-1929.—ABSTRACT OF NOTIFICATIONS UNDER  
NOTIFICATION OF BIRTHS ACT, 1907, AND RESULTS OF VISITS.

	1927.	1928.	1929.
Total Number of Notifications, ... ..	24,882	24,720	23,917
Doctor at Home, ... ..	7,140	6,858	6,451
Doctor in Institution, ... ..	3,636	3,945	3,939
Maternity Hospital (Outdoor) Nurse, ... ..	3,486	3,670	3,742
Other Institutional Nurse, ... ..	—	—	—
Certified Midwife, ... ..	10,601	10,227	9,765
Others, ... ..	19	20	20
Total Cards issued, ... ..	17,742	17,862	17,466
Total Cards returned, ... ..	17,683	17,919	17,661
Full Information, ... ..	16,757	16,969	16,786
Doctor found in attendance, ... ..	32	33	17
Wrong Address—Not Traced, ... ..	—	—	—
Others, ... ..	894	917	858

TABLE XVI.—GLASGOW, 1927-1929.—BIRTHS NOTIFIED SHOWING MEDICALLY  
AND NOT MEDICALLY ATTENDED.

	1927	1928	1929
Notifications Received— <i>less Duplicates</i> —			
Total, ... ..	24,882	24,720	23,917
Live-births, ... ..	23,866	23,678	22,812
Still-births, ... ..	1,016	1,042	1,105
Per cent. Still-births to Total, ... ..	4.1	4.2	4.6
Medically attended—			
Total Births at Home, ... ..	7,140	6,858	6,451
In Institutions, ... ..	3,636	3,945	3,939
Total, ... ..	10,776	10,803	10,390
Per cent., ... ..	43.3	43.7	43.4
Still-births at Home, ... ..	265	241	254
Still-births in Institutions, ... ..	380	405	465
Not Medically attended—			
Maternity Hospital, Outdoor Nurse, ... ..	3,486	3,670	3,742
Other Institutional Nurses, ... ..	—	—	—
Certified Midwives, ... ..	10,601	10,227	9,765
Others, ... ..	19	20	20
Total, ... ..	14,106	13,917	13,527
Per cent., ... ..	56.7	56.3	56.6
Still-births, ... ..	371	396	386

TABLE XVII.—GLASGOW, 1928 AND 1929.—CASES OF INFECTIOUS DISEASES REGISTERED AND NUMBERS OF THESE TREATED IN LOCAL AUTHORITY HOSPITALS, &C.†

	1928.				1929.			
	L.A. Hosp.	Other Institutions.	Home.	Total.	L.A. Hosp.	Other Institutions.	Home.	Total.
<b>A.—Notifiable—</b>								
Typhus Fever, ... ..	—	—	—	—	—	—	—	—
Enteric Fever, ... ..	46	4	8	58	75	2	8	85
Continued and Undefined Fever	3	—	1	4	3	—	2	5
Puerperal Fever, ... ..	284	89	40	413	330	151	35	516
Puerperal Pyrexia,†	—	—	—	—	5	22	22	49
Smallpox, ... ..	—	—	—	—	22	—	—	22
Scarlet Fever, ... ..	3,010	—	227	3,237	3,120	1	233	3,354
Diphtheria and Membranous Croup, ... ..	2,509	30	91	2,630	2,052	9	57	2,118
Erysipelas, ... ..	474	19	429	922	588	30	480	1,098
Cholera, ... ..	—	—	—	—	—	—	—	—
Cerebro-Spinal Fever, ... ..	82	16	4	102	163	21	19	203
Ophthalmia Neonatorum, ... ..	57	—	635	692	55	—	585	640
Trachoma, ... ..	10	1	19	30	13	—	32	45
Acute Encephalitis Lethargica, ... ..	5	7	22	34	9	8	16	33
Acute Polio-Encephalitis, ... ..	—	1	1	2	1	—	—	2
Acute Poliomyelitis, ... ..	40	15	64	119	11	5	10	26
Acute Primary Pneumonia, ... ..	3,264	557	1,847	5,668	3,476	703	2,867	7,046
Acute Influenzal-Pneumonia, ... ..	197	19	188	404	399	125	655	1,179
Malaria, ... ..	2	1	21	24	3	11	18	32
Dysentery, ... ..	32	5	8	45	81	26	12	119
Infective Jaundice, ... ..	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis, ... ..	873	—	851	1,724	965	—	839	1,804
Other Forms of Tuberculosis, ... ..	319	—	788	1,107	359	—	633	992
<b>B.—Not Notifiable—</b>								
Measles, ... ..	974	16	9,108	10,098	608	16	5,844	6,468
German Measles, ... ..	66	—	197	263	181	2	1,275	1,458
Whooping-cough, ... ..	831	12	7,280	8,123	556	3	4,545	5,104
Chickenpox,* ... ..	239	18	5,305	5,562	247	32	7,824	8,403
Mumps, ... ..	13	—	—	13	10	—	—	23
Totals, ... ..	13,330	810	27,134	41,274	13,332	1,167	26,011	40,510
Notified, but diagnosis altered to Non-Infectious Diseases, ... ..	1,173	3	16	1,192	1,025	3	10	1,038
Total Registered, ... ..	14,503	813	27,150	42,466	14,357	1,170	26,021	41,548

† Where patients suffer from two or more diseases, each disease is reckoned as a case.

‡ Made compulsorily notifiable from 1st October, 1929.

\* Made compulsorily notifiable in March, 1927.



TABLE XVIII.—GLASGOW, 1925-1929.—CASE-RATES *per million*  
FOR INFECTIOUS DISEASES.

	CASE RATES PER MILLION.				
	1925.	1926.*	1927.	1928	1929.
A.—Notifiable—					
typhus Fever, ... ..	—	7	—	—	—
nteric Fever, ... ..	40	91	131	51	73
ontinued and Undefined Fever, ... ..	8	4	4	3	4
uerperal Fever, ... ..	273	279	245	360	445
uerperal Pyrexia, ... ..	—	—	—	—	42
mallpox, ... ..	—	—	—	—	19
earlet Fever, ... ..	3,472	4,252	3,641	2,822	2,890
iphtheria and Membranous Croup, ... ..	1,581	2,082	2,685	2,293	1,825
rysipelas, ... ..	913	922	750	804	946
holera, ... ..	—	—	—	—	—
erebro-Spinal Fever, ... ..	56	60	70	89	175
phthalmia Neonatorum, ... ..	560	601	577	603	551
rachoma, ... ..	37	39	43	26	39
cute Encephalitis Lethargica, ... ..	66	39	20	30	28
cute Polio-Encephalitis, ... ..	2	3	—	2	1
cute Poliomyelitis, ... ..	7	9	11	104	22
cute Primary Pneumonia, ... ..	5,285	5,589	5,198	4,941	6,070
cute Influenzal-Pneumonia, ... ..	276	483	332	352	1,016
alaria, ... ..	17	20	17	21	28
ysentery, ... ..	11	11	26	39	103
fective Jaundice, ... ..	—	1	—	—	—
ulmonary Tuberculosis, ... ..	1,457	1,572	1,435	1,503	1,554
ther Forms of Tuberculosis, ... ..	1,016	907	974	965	855
B.—Not Notifiable—					
measles, ... ..	5,927	14,630	7,945	8,803	5,572
erman Measles, ... ..	228	423	153	229	1,256
hooping-cough, ... ..	11,109	3,466	8,839	7,081	4,397
ickenpox, ... ..	6,519	5,191	6,955	4,849	6,981
thers, ... ..	2	4	4	11	9
Totals, ... ..	38,862	40,684	40,055	35,981	34,901

\*Added Area not included.

TABLE XI—

CASES OF INFECTIOUS DISEASE REGISTERED IN EACH MONTH—SHOWING NUMBERS

	Typhus Fever.		Enteric, including Paratyphoid Fever.		Continued and Undefined Fever.		Puerperal Fever.		Puerperal Pyrexia.		Smallpox.		Scarlet Fever.		Diphtheria and Membranous Group.		Erysipelas.		Cerebro-Spinal Fever.		Ophthalmia Neonatorum.		Trachoma.		Acute Encephalitis Lethargica.		Acute Folio-Encephalitis.	
	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.
Jan.,	...	...	3	1	1	...	26	7	...	...	...	...	267	21	173	10	65	52	19	...	1	50	1	...	...	3	...	
Feb.,	...	...	2	...	...	...	24	11	...	...	...	...	195	27	127	5	39	44	29	7	1	39	...	1	...	1	...	
March,	...	...	12	1	1	1	29	7	...	...	...	...	234	22	178	3	49	44	22	5	4	50	4	2	2	7	...	
April,	...	...	6	1	...	1	27	3	...	...	21	...	182	16	151	3	54	33	16	7	4	60	3	2	1	1	...	
May,	...	...	4	...	...	...	22	8	...	...	1	...	216	23	155	9	57	34	21	3	2	50	1	1	...	2	...	
June,	...	...	4	...	...	...	28	12	...	...	...	...	191	16	132	7	53	37	11	3	7	53	3	1	1	...	...	
July,	...	...	5	1	...	...	21	21	...	...	...	...	173	10	105	3	33	36	12	3	8	46	...	...	1	1	...	
August	...	...	17	1	...	...	21	15	...	...	...	...	177	8	138	2	35	35	9	6	3	45	...	1	...	3	1	...
Sept.	...	...	4	3	...	...	23	13	...	...	...	...	328	9	186	3	32	28	7	1	1	38	...	6	...	2	...	
October	...	...	4	1	1	...	35	31	...	7	...	...	396	20	248	13	57	49	2	...	6	51	1	2	2	...	...	
Nov.	...	...	6	1	...	...	34	25	...	14	...	...	427	32	250	1	55	70	8	1	6	51	...	1	...	2	...	
Dec.	...	...	8	...	...	...	40	33	5	23	...	...	334	30	209	7	59	48	7	4	12	52	...	15	2	2	...	
	...	...	75	10	3	2	330	186	5	44	22	...	3120	234	2052	66	588	510	163	40	55	585	13	32	9	24	1	...



TABLE XX.—HOSPITAL BED ACCOMMODATION FOR INFECTIOUS DISEASES  
IN GLASGOW SINCE 1865 (EXCLUDING TUBERCULOSIS).

YEAR.	PARISH.			Glasgow Royal Infirmary.	LOCAL AUTHORITY.						Total Beds.	Population in Thousands.	Beds per
	City.	Barony.	Govan.		Parliamen- tary Road.	Belvidere Fever.	Belvidere Smallpox.	Ruchill.	Shieldhall.	Knights- wood.			
1865	100	120	54	200	136	—	—	—	—	—	610	428	1
1866	100	120	54	175	136	—	—	—	—	—	585	438	1
1867	—	120	54	100	136	—	—	—	—	—	410	446	(
1869	—	120	54	135	136	—	—	—	—	—	445	464	1
1870	—	120	54	100	250	250	—	—	—	—	774	471	1
1872	—	120	—	100	250	250	—	—	—	—	720	495	
1875	—	—	—	100	250	250	—	—	—	—	600	500	
1876	—	—	—	—	250	250	—	—	—	—	500	502	
1878	—	—	—	—	120	250	150	—	—	—	520	507	
1880	—	—	—	—	120	250	150	—	—	—	520	510	
1881	—	—	—	—	120	370	150	—	—	—	640	512	
1882	—	—	—	—	120	220	150	—	—	—	490	518	
1887	—	—	—	—	120	390	150	—	—	—	660	545	2
1893	—	—	—	—	200	390	150	—	—	—	740	678	1
1900	—	—	—	—	200	390	150	440	—	—	1,180	744	3
1901	—	—	—	—	200	390	220	440	—	—	1,250	764	3
1906	—	—	—	—	—	390	220	440	—	—	1,050	836	3
1910	—	—	—	—	—	390	220	542	—	—	1,152	884	3
1913	—	—	—	—	—	390	220	542	100	81	1,333	1,032	3
1915	—	—	—	—	—	390	220	542	100	10	1,262	1,035	2
1923	—	—	—	—	—	610	—	542	100	114	1,366	1,089	3
1925	—	—	—	—	—	610	—	542	100	134	1,386	1,096	3
1926	—	—	—	—	—	610	—	542	120	134	1,406	1,098	3
1929	—	—	—	—	—	610	—	542	100	170	1,422	1,161	3

Smallpox accommodation is provided in two wards (40 beds) in Robroyston Auxiliary Hospital.  
The City has also a part interest in Lightburn Hospital—about 7·8 beds.

“ “ “ Darnley “ “ 20 “  
“ “ “ Blawarthill “ “ “

TABLE XX.—(Continued.)

## INSTITUTION ACCOMMODATION FOR FEVER AND TUBERCULOSIS PATIENTS:—

				Fever.	Tuberculosis.	Total.
Belvidere Hospital,	...	...	...	610	—	610
Ruchill Hospital, ...	...	...	...	542	272	814
Shieldhall Hospital,	...	...	...	100	—	100
Knightwood Hospital,	...	...	...	170	88	258
Bellefield Sanatorium,	...	...	...	—	56	56
Robroyston Sanatorium,	...	...	...	—	548	548
TOTAL BEDS IN CORPORATION						
INSTITUTIONS,	...	...	...	1,422	964	2,386
Ochil Hills Sanatorium, ...				—	50	50
Bridge of Weir Sanatorium, ...				—	70	70
Dunblane Sanatorium, ...				—	12	12
Seaforth Sanatorium, ...				—	14	14
Hairmyres Sanatorium, ...				—	7	7
Lanfine Home, ...				—	32	32
Strathblane Hospital, ...				—	10	10
Poor Law Institutions, ...				—	218	218
BEDS IN OTHER INSTITUTIONS,				—	413	413*
TOTAL, ...				1,422	1,377	2,799

\* Average daily number occupied during 1928.



## SHOWING NUMBER, AVERAGE RESIDENCE, AND

ORDINARY NETT EXPENDITURE (as per Treasurer's Statement), excluding Interest and Sinking Fund Charges:—

Infectious Diseases Hospital, Belvidere, ...	£62,727	12	1
Infectious Diseases Hospital, Ruchill, ...	89,803	18	7
Infectious Diseases Hospital, Shieldhall, ...	12,890	13	1
Infectious Diseases Hospital, Knightswood, ...	24,512	0	7
Sanatorium and Auxiliary Hospital, Robroyston, ...	53,173	0	5
Bellefield Sanatorium, ...	8,150	0	1
	<u>£251,257</u>	<u>41</u>	<u>1</u>

Average Residence of Patients dismissed, 1928-1929, ... 53·45 days.

Average Daily Expenditure, ...	£688	7
Average Daily Cost per Patient, ...	0	6
Average Cost of Treatment per Patient, ...	16	14
Average Cost of Bed per Year, ...	114	7

NUMBER OF PATIENTS TREATED IN HOSPITALS AND SANATORIA  
AND AVERAGE DAILY COST PER PATIENT.

	Remain- ing, 31/5/28.	Admitted 1928/29.	Total under Treatment.	Dismissed, 1928/29.	Remain- ing 31/5/29.	Average Daily Number.	Average Daily Cost per Patient
Belvidere Hospital, ...	516	5,876	6,392	5,851	541	556	6/2
Ruchill Hospital, ...	718	5,548	6,266	5,532	734	751	6/7
Shieldhall Hospital, ...	78	975	1,053	962	91	93	7/7
Knightswood Hospital, ...	228	1,497	1,725	1,537	188	204	6/7
Robroyston Sanatorium and Auxiliary Hospital, ...	546	514	1,060	541	519	543	5/4
Bellefield Sanatorium, ...	50	112	162	112	50	50	9/0
Total, ...	2,136	14,522	16,658	14,535	2,123	2,197	6/3*
Darnley Joint Hospital, ...	21	112	133	110	23	22	—
Lightburn Joint Hospital, ...	11	142	153	130	23	13	—
Blawarthill Joint Hospital, ...	4	44	48	41	7	5	—
Grand Total, ...	2,172	14,820	16,992	14,816	2,176	2,237	—

\* Interest and Sinking Fund averages 1/10 per patient day.

## XI.

## COST OF TREATMENT OF PATIENTS, 1928-1929.

PATIENTS DISMISSED FROM CORPORATION INSTITUTIONS, CLASSIFIED AS TO DISEASE, AVERAGE RESIDENCE OF PATIENTS DISMISSED, AND AVERAGE COST AT THE DAILY RATE GIVEN ABOVE.

DISEASE.					NUMBER DISMISSED.	AVERAGE RESIDENCE.	AVERAGE Cost.
						— days	£ —
Typhus Fever,	...	...	...	...	—	— days	£ —
Smallpox,	...	...	...	...	16	29·69	9 6 0
Bacterial Fever,	...	...	...	...	50	50·04	15 13 6
Erysipelas,	...	...	...	...	—	—	—
Scarlet Fever,	...	...	...	...	304	34·42	10 15 8
Diphtheria,	...	...	...	...	2,984	43·58	13 13 1
Cerebral Lethargia,	...	...	...	...	2,130	43·51	13 12 8
Encephalitis Lethargica,	...	...	...	...	9	201·22	63 0 10
Polio-myelitis,	...	...	...	...	45	78·47	24 11 9
Neuritis,	...	...	...	...	39	51·67	16 3 9
Acute Primary Pneumonia and Influenzal-							
Pneumonia,	...	...	...	...	4,250	28·91	9 1 2
Tropical Diseases,	...	...	...	...	31	27·00	8 9 2
Measles and German Measles,	...	...	...	...	353	24·63	7 14 4
Whooping-Cough,	...	...	...	...	792	47·14	14 15 5
Phthisis,	...	...	...	...	1,238	158·29	49 11 10
Non-Pulmonary Tuberculosis,	...	...	...	...	282	444·21	139 3 8
Other Infectious Diseases,	...	...	...	...	1,060	24·19	7 11 7
All other Diseases,	...	...	...	...	1,233	25·77	8 1 6
					14,816		

\* Includes Erysipelas, Cerebro-spinal Fever, Chickenpox, and Influenza.

† Includes Nursing Mothers, also Persons sent in by mistaken diagnosis.

TABLE XXII.—GLASGOW.—STATUTORY DECLARATIONS OF CONSCIENTIOUS  
OBJECTION TO VACCINATION IN EACH WARD DURING 1929.

MUNICIPAL WARDS.	Conscientious Objections Lodged.	Percentage of Births Registered.		
		1929.	1928.	1927.
1. Shettleston and Tollcross	208	25	20	22
2. Parkhead, ... ..	216	23	24	21
3. Dalmarnock, ... ..	297	29	21	20
4. Calton, ... ..	226	25	18	21
5. Mile-end, ... ..	173	24	21	22
6. Whitevale, ... ..	132	24	22	23
7. Dennistoun, ... ..	48	15	15	15
8. Provan, ... ..	215	23	21	18
9. Cowlairs, ... ..	183	41	31	32
10. Springburn, ... ..	172	35	37	29
11. Townhead, ... ..	148	27	26	24
12. Exchange, ... ..	96	25	18	19
13. Blythswood, ... ..	40	16	18	15
14. Anderston, ... ..	111	17	20	14
15. Sandyford, ... ..	71	17	15	16
16. Park, ... ..	31	15	19	16
17. Cowcaddens, ... ..	210	20	20	18
18. Woodside, ... ..	143	18	14	16
19. Ruchill, ... ..	204	26	25	24
20. North Kelvin ... ..	82	22	19	17
21. Maryhill, ... ..	122	24	18	19
22. Kelvinside, ... ..	21	14	6	10
23. Partick (East), ... ..	94	18	20	17
24. „ (West), ... ..	129	27	23	18
25. Whiteinch, ... ..	231	27	29	26
26. Hutchesontown, ... ..	330	31	29	26
27. Gorbals, ... ..	286	24	23	20
28. Kingston, ... ..	255	32	30	27
29. Kinning Park, ... ..	291	33	26	25
30. Govan, ... ..	384	40	38	41
31. Fairfield, ... ..	293	48	41	40
32. Pollokshields, ... ..	75	22	19	15
33. Camphill, ... ..	35	17	10	13
34. Pollokshaws, ... ..	146	48	33	37
35. Govanhill, ... ..	171	28	30	22
36. Langside, ... ..	25	13	11	12
37. Cathcart, ... ..	48	18	21	18
Institutions, &c., ... ..	7	—	—	—
	5,949	26	24	22

TABLE XXIII.—GENERAL SANITARY OPERATIONS.—(a) FOOD AND DRUGS, &amp;c.

	Year.	1929.	1928.	1927.
<b>I. Dairies.</b>				
Registered during year, ... ..		216	246	201
Removed from Register, ... ..		199	215	169
On Register at 31st Dec., ... ..		1,676	1,659	1,628
Number of Inspections, ... ..		23,322	22,571	22,901
Contraventions of Orders or Regulations, ... ..		22	23	19
Prosecutions for same, ... ..		14	11	13
Repairs or Improvements effected, ... ..		12	17	13
<b>II. Dealers in Ice Cream.</b>				
Registered during the year, ... ..		65	59	83
Removed from Register, ... ..		49	55	85
On Register at 31st Dec., ... ..		618	602	598
Number of Inspections, ... ..		9,734	9,397	9,453
Contraventions of Orders or Regulations, ... ..		—	8	12
Prosecutions for same, ... ..		—	—	2
Repairs or Improvements effected, ... ..		5	8	6
<b>III. Byres for Milch Cows.</b>				
Number of Dairy Byres as at 31st Dec., ... ..		53	52	54
„ Cows licensed for, ... ..		1,217	1,199	1,197
Average number kept, ... ..		1,035	957	951
Number of Inspections, ... ..		453	529	605
<b>IV. Unwholesome Food.</b>				
Number of Inspections, ... ..		13,418	13,148	13,329
„ Lots dealt with, ... ..		54	38	38
Nature of Food destroyed at Inspector's instance with Owner's consent—				
Cheese, ... .. (lbs.)		210	—	—
Canned Food (various) ... ..		1,688	1,610	2,059
Fruit (Dried and Soft), ... ..		24,296	34,188	7,335
Pork (Cured), ... ..		168	424	49
Pork and Brawn, ... ..		36	—	—
Confections, ... ..		—	168	—
Sausages, ... ..		—	—	30
Pickles, ... ..		24	—	—
Lard, ... ..		—	—	62
Poultry, ... ..		—	90	—
Vegetables, ... ..		58,006	54,460	37,542
Eggs (Canned and Frozen), ... ..		22	22	—
„ (in shell), ... ..		1,356	—	74
Sauce, ... .. (Quart bots.)		30	—	—
Prosecutions, ... ..		—	—	—

TABLE XXIII. (Continued).

Year.	1929.	1928.	1927.
<b>V. Food and Drugs (Adulteration) Act.</b>			
Informal Samples analysed, ... ..	3,875	3,902	4,132
Statutory Samples analysed, ... ..	1,336	1,333	1,411
"    "    found non-genuine, ... ..	71	106	58
Proceedings instituted, ... ..	57	50	36
Number of Convictions, ... ..	51	49	33
Amount of Fines imposed, ... ..	£223 2/-	£204 12/-	£146 3/-
Number dismissed or found "Not proven," ...	1	1	2
"    deserted <i>simpliciter</i> , ... ..	—	—	1
"    withdrawn and Expenses paid ... ..	5	—	—
Amount of Expenses paid, ... ..	£7 17/6	—	—
Prosecutions for Margarine offences, ... ..	7	5	2
Fines and Expenses imposed, ... ..	£16	£13	£5
Non-convictions, ... ..	—	—	—
Obstruction, ... ..	—	—	—
Fines imposed, ... ..	—	—	—
Vending Milk without name and address being on vessel,	—	—	—
Number of Convictions, ... ..	—	—	—
Amount of Fines, ... ..	—	—	—
Refusal to Sell, ... ..	—	—	—
Number of Convictions, ... ..	—	—	—
Amount of Fines, ... ..	—	—	—
<b>VI. The Sale of Horse-Flesh Regulation Act, 1889.</b>			
Number of premises in which Horse-flesh is sold, ...	—	—	—
Prosecutions for contravention of Act, ... ..	—	—	—
Fines imposed, ... ..	—	—	—
<b>VII. Merchandise Marks Acts and Orders.</b>			
Number of Prosecutions, ... ..	10	—	—
"    Convictions, ... ..	10	—	—
Amount of Fines imposed, ... ..	£57	—	—
<b>VIII. Fish and Game Inspection.</b>			
Under the Glasgow Police Amendment Act, 1890.			
Number of Packages of Fish, Game, Poultry, and Rabbits			
passed through Fish Market, ... ..	1,704,115	1,764,075	1,729,159
"    Inspections of Fish Shops, Restaurants, and			
Hawkers' Barrows and Carts, ... ..	1,367	1,486	1,429
"    Nuisances discovered therein, ... ..	—	—	—
Fish and Game destroyed with consent—			
Fresh Fish, ... .. (lbs.)	94,969	98,842	112,592
Cured " ... ..	22,872	15,751	10,362
Shell " ... ..	144	362	624
Crabs and Lobsters, ... ..	36	653	133
Venison, ... ..	234	1,259	190
Rabbits, ... ..	2,696	1,465	7,578
Poultry and Game, ... ..	2,444	4,897	1,176
Eggs, ... ..	68	152	444



TABLE XXIII.—(Continued.)

## (b) AIR PURIFICATION.

	Year.	1929.	1928.	1927.
<b>Smoke Prevention.</b>				
Glasgow Police (Further Powers) Act, 1892, Sec. 31.				
Number of Inspections of Boiler and other Furnaces,		1,372	1,453	1,483
" Observations of Chimneys, ... ..		28,893	28,491	27,714
" Intimations of Excess Smoke given, ...		359	344	366
" Warning Notices to those contravening the Act, ... ..		19	26	38
" Prosecutions in Police Courts, ... ..		24	57	42
" Convictions, ... ..		20	53	41
Amount of Fines imposed, ... ..		£32 1/-	£61 0/6	£62 14/-
Number of Prosecutions withheld on receiving a promise from Offenders to improve the Furnace Plant, ... ..		4	5	7
" Prosecutions withheld on account of accidents to Furnace Plant, or regular Fireman temporarily off duty, ... ..		1	1	1
" New Steam Boilers installed to give increased power, ... ..		8	13	8
" Mechanical Stokers fitted to Steam Boiler Furnaces, ... ..		1	7	6
" Steam Boiler Furnaces fitted with Smoke-preventing Appliances, ... ..		5	4	3
" Furnaces in which Anthracite, Coke, or other non-bituminous Fuel has been substituted for ordinary Coal, ... ..		15	11	17
" Furnaces adapted for Smokeless Combustion of Oil Fuel, ... ..		1	3	3
" Steam Boilers replaced by Electric Motors (using Corporation power), ... ..		5	13	5
" Furnaces formerly Coal-fired, reconstructed for use of Corporation gas, ... ..		—	9	18
" New Chimneys erected or existing Chimneys heightened to give increased draught and carry gases higher, ... ..		6	8	7
" Improvements to Furnaces not coming under any of the above headings, ... ..		4	8	7
<b>Spraying Dungsteads, Ashpits and Privies.</b>				
Total number of Dungsteads Sprayed from 6th May till 28th September, ... ..		18,745	18,180	19,444
Total Outlay for Wages, Plant, and Material, ... ..		£474	£441	£512
<b>Interments.</b>				
For year ending 31st May.				
Total number of Applications granted for Interment of Unclaimed and other Bodies, ... ..		362	359	360
Total Expenditure, ... ..		£867 13 10	£843 1/-	£793 0/6
Payment of Costs recovered, ... ..		£242 14 1	£283 12/11	£248 6/1

TABLE XXIII.—(c) SUMMARY OF OPERATIONS OF SANITARY

District.	EASTERN.						
	1	2	3	4	5	6	7
<b>1 (a) Nuisances.</b>							
INSPECTIONS made—							
Nuisances, ... ..	27,484	29,077	27,446	42,663	32,316	19,829	18,697
Underground Dwellings, ... ..	...	...	...	...	...	...	...
Water Storage Cisterns, ... ..	486	125	28	...	...	...	25
Limewashings, ... ..	768	1,622	1,878	1,975	2,224	313	786
Stair Cleaning, ... ..	4,781	3,890	5,209	6,319	3,088	1,661	1,314
Drain Testing, ... ..	1,912	919	611	1,016	537	481	746
Total, ... ..	35,431	35,633	35,172	51,973	38,165	22,284	21,568
Nuisances removed or remedied, ... ..	1,734	2,114	2,915	4,186	3,056	1,179	814
Consisting of—							
Apartments, Lobbies, or W.C.'s, with insufficient light or ventilation, or otherwise defective in construction, ... ..	...	...	...	...	...	...	...
Defective Chimneys causing nuisance, ... ..	8	6	26	39	23	6	6
Disrepair or dampness in Dwelling-houses, ... ..	136	156	279	684	212	48	31
Offensive smells from Drains, or other reasonable grounds—smoke test, ... ..	23	17	15	22	13	7	14
Drains, Conductors, Soil-pipes, or Rhones choked or defective, ... ..	655	751	1,139	1,368	1,113	548	431
Sanitary Fittings choked or defective, ... ..	321	245	407	553	536	156	40
Dirty Houses and Bedding, ... ..	62	123	59	233	120	45	10
Dirty Closets, Stairs, &c. (daily and hi-weekly cleansing), ... ..	17	240	246	222	224	42	7
Houses overcrowded, ... ..	...	...	...	...	...	...	...
Walls of Closets, Staircases, Lobbies, W.C.'s, and external walls of Houses, filthy (limewashing), ... ..	218	317	299	380	318	209	173
Animals or Poultry kept so as to be a nuisance, ... ..	...	2	...	...	...	...	...
Accumulations of Garbage or Rubbish, ... ..	12	21	61	277	29	37	3
Smells from Decaying Animal Matter or other cause, ... ..	1	2	4	2	2	...	1
Stagnant Water, ... ..	...	...	5	4	2	2	3
Premises infested with Rats or other vermin, ... ..	2	...	1	8	1	1	...
Sink accommodation and Water Supply required, ... ..	...	...	...	...	...	...	...
Water-Closet accommodation required, ... ..	...	...	...	2	...	...	1
Water Storage Cisterns dirty, uncovered, or unventilated, ... ..	80	38	9	...	...	...	28
Water Supply Pipes defective—tenants without water, ... ..	29	52	96	90	145	30	11
Pit Shaft without adequate protection, ... ..	...	...	...	...	...	...	...
Reports to Gas Manager, ... ..	...	...	1	1	...	...	...
Master of Works, ... ..	20	43	116	135	121	25	27
Superintendent of Cleansing, ... ..	...	3	1	1	...	1	...
Water Engineer, ... ..	150	98	151	165	197	22	28
Prosecutions—Sheriff Court, ... ..	...	...	...	...	...	...	...
Police Court, ... ..	...	...	...	...	1	1	...
Number Successful, ... ..	...	...	...	...	1	1	...
Amount of Fines, ... ..	...	...	...	...	20/-	10/-	...
Number of Rotation Cards for Cleansing of Common Stairs, Lobbies, and W.C.'s served on Tenants, ... ..	136	156	317	408	237	90	136
<b>1. (b) Drain Testing.</b>							
Total number of Applications of the test, first and subsequent, ... ..	377	97	44	72	34	26	129
Number of Applications for satisfaction of Dean of Guild Court, ... ..	308	59	10	18	3	2	95
Number of first Applications to old Tenements or Systems, ... ..	31	21	18	29	16	15	22
Number of these found smoke tight, ... ..	4	6	5	13	3	7	4
Number of these found more or less defective, ... ..	27	15	13	16	13	8	16

## SECTION FOR THE YEAR 1929—Continued.

## NORTHERN.

8	9	10	11	17	18	19	20	21
18,278	11,483	11,491	12,550	25,212	24,700	12,567	7,892	13,080
... 147	... 98	... 295	... 48	... 158	... 3	... 496	... 132	... 376
233	341	642	596	624	750	457	121	544
777	776	290	519	480	1,580	3,447	325	334
3,383	400	1,347	1,015	1,369	1,693	2,812	656	1,700
22,818	13,098	14,065	14,728	27,843	28,726	19,779	9,126	16,034
1,639	917	1,317	1,330	2,461	2,421	1,116	769	802
... 9	... 42	... 3	... 5	... 15	... 30	... 11	... 8	... 4
51	...	94	53	119	146	38	30	33
24	14	18	33	39	51	23	24	24
762	540	500	515	970	936	552	285	258
136	47	172	114	271	299	97	51	71
147	10	36	69	160	139	46	12	42
26	41	23	17	87	169	130	37	28
...	...	...	...	3	...	...	...	...
205	99	223	326	438	328	33	236	99
... 9	... 3	... 35	... 16	... 45	... 36	... 16	... 9	... 10
...	...	2	2	4	7	3	2	...
...	...	2	...	...	1	1	...	...
5	3	2	4	12	20	1	1	2
...	...	...	...	...	...	...	...	...
...	...	3	...	...	...	...	...	...
56	25	59	9	40	1	86	30	131
36	26	43	21	79	36	26	9	14
...	...	1	...	...	...	...	...	...
...	...	1	...	1	...	...	...	...
26	31	53	100	76	99	11	5	40
...	...	...	3	2	...	...	...	...
147	36	47	43	100	123	42	30	46
...	...	...	...	6	1	...	...	...
1	...	...	...	1	2	...	...	...
1	...	...	...	7	3	...	...	...
20/-	...	...	...	21/-	25/-	...	...	...
48	46	67	42	286	119	32	110	15
751	30	260	89	121	141	527	65	286
683	1	218	1	27	10	472	2	240
34	14	16	39	42	59	26	27	24
3	5	1	2	1	6	5	1	...
31	9	15	37	41	53	21	26	24

TABLE XXIII.—(c) SUMMARY OF OPERATIONS

CENTRAL.								
12	13	14	15	16	22	23	24	25
16,124	9,281	15,489	13,504	14,544	14,217	14,048	13,521	23,995
...	...	...	...	...	...	...	...	...
109	37	28	...	...	...	...	...	...
164	1,701	457	273	721	1,068	625	768	642
4,792	4,581	2,741	3,259	1,196	1,595	1,509	1,691	1,687
2,122	3,213	1,092	1,147	1,194	2,097	1,853	1,355	8,128
23,311	18,813	19,807	18,183	17,655	18,977	18,035	17,335	34,452
1,726	1,339	1,905	1,241	725	496	2,030	1,312	1,475
6	1	4	...	1	1	5	...	...
15	25	26	23	8	1	36	28	9
240	138	173	132	34	19	201	158	91
13	13	18	16	18	13	20	20	37
566	374	602	416	285	151	586	405	614
299	212	256	160	44	24	300	193	143
46	17	14	12	2	1	137	32	30
44	72	39	49	35	83	167	24	22
...	...	...	...	...	...	...	...	...
121	151	443	148	115	138	288	194	271
...	...	...	...	...	...	...	...	...
70	138	91	103	70	15	49	28	29
7	7	3	4	2	1	11	1	2
8	...	3	3	...	1	4	2	2
4	3	2	8	...	...	1	1	1
3	...	...	...	...	...	8	...	...
3	2	2	1	...	1	6	...	...
52	3	31	...	1	...	...	...	...
89	28	48	41	6	2	57	34	4
...	...	...	...	...	...	...	...	...
...	1	...	...	...	1	4	1	...
62	89	26	39	42	11	44	57	74
3	1	1	4	7	5	5	2	6
75	64	123	82	55	28	101	132	140
3	...	...	...	...	...	...	...	...
1	6	...	1	1	...	...	...	2
4	3	...	1	1	...	...	...	2
20/-	26/-	...	5/-	20/-	...	...	...	15/6
178	169	303	278	199	112	290	96	73
68	77	59	48	48	71	75	78	1,322
24	44	11	7	7	40	23	35	1,236
22	14	21	19	18	16	27	24	45
6	1	...	1	8	3	2	4	6
16	13	21	18	10	13	25	20	39

## OF SANITARY SECTION FOR THE YEAR 1929—Continued.

SOUTH-EASTERN.							SOUTH-WESTERN.					CITY. 1929.	1928.
26	27	33	34	35	36	37	28	29	30	31	32		
36,034	37,909	15,478	12,943	33,608	21,180	11,148	36,964	47,191	36,997	21,567	18,186	798,693	789,362
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	1	21	1	238	213	...	...	...	...	...	...	...
414	854	119	318	271	116	572	1,992	2,197	2,309	2,190	1,349	32,994	24,739
256	845	314	176	692	375	635	4,012	7,461	8,024	4,204	955	85,790	66,370
906	1,075	422	538	578	247	2,206	441	206	598	363	1,565	51,943	53,105
37,610	40,683	16,334	13,996	35,150	22,156	14,774	43,417	57,055	47,928	28,324	22,131	972,576	935,848
1,775	3,394	867	1,162	1,605	790	653	4,141	4,395	5,914	2,527	1,223	69,465	61,052
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	8	1	...	4	...	...	12	...	...	...	...	43	84
20	20	...	11	5	2	4	49	31	54	15	5	586	651
212	350	40	124	142	23	58	410	353	959	358	102	6,469	6,462
32	33	14	13	19	13	2	3	4	2	2	2	668	999
711	1,215	384	515	700	334	264	1,382	1,442	1,659	795	443	25,166	23,113
203	289	86	205	141	110	67	539	706	904	377	148	8,922	6,215
81	271	6	19	8	1	2	22	16	14	3	2	2,049	2,487
81	413	54	54	244	44	8	473	640	784	168	23	5,077	3,650
...	1	...	...	...	...	...	...	1	1	...	...	6	4
163	239	155	123	89	102	60	287	321	213	336	184	8,042	7,261
1	2	...	...	1	...	...	12	4	3	4	1	30	40
25	169	19	3	35	7	14	159	81	148	22	25	1,919	1,817
1	2	...	2	5	3	...	8	7	9	3	2	112	111
...	1	...	...	1	1	...	15	12	19	7	2	101	66
4	15	...	...	1	11	2	8	16	27	3	2	172	111
...	...	...	...	...	...	...	...	...	1	...	2	14	15
...	2	...	...	12	...	...	...	...	1	...	2	44	283
...	...	9	12	1	18	72	3	...	...	...	16	810	711
35	31	4	3	24	5	7	117	88	156	19	21	1,562	976
...	...	...	...	...	...	...	...	...	...	...	...	1	2
...	...	...	...	...	...	...	...	...	...	...	...	11	26
138	126	22	36	53	3	20	233	241	301	165	107	2,817	2,767
4	2	...	...	...	...	1	62	53	32	40	5	244	217
64	205	73	42	120	113	72	347	379	627	208	125	4,600	2,984
...	...	...	...	...	...	...	...	...	...	...	...	10	3
2	...	...	...	...	...	...	3	...	...	7	4	33	26
2	...	...	...	...	...	...	3	...	...	7	4	40	29
20/-	...	...	...	...	...	...	47/-	...	...	15/-	15/-	13 19/6	14 16/
27	389	140	34	134	120	43	369	400	232	193	102	6,126	6,605
71	83	66	93	57	39	2,002	21	25	75	43	276	7,746	7,439
4	12	31	50	16	11	1,991	8	11	64	31	244	6,049	5,144
42	46	20	21	22	14	8	8	10	6	6	8	850	1,098
1	3	...	1	1	1	2	1	1	...	1	4	113	167
41	43	20	20	21	13	6	7	9	6	5	4	737	931



TABLE XXIII.—(c) SUMMARY OF OPERATIONS OF SANITARY

Division. Ward.	EASTERN.						
	1	2	3	4	5	6	7
<b>2. Common Lodging Houses.</b>							
Number measured and registered, ... ..	...	...	...	...	...	...	...
Total number now on register, ... ..	1	...	...	10	...	...	...
With accommodation for ... ..	404	...	...	2,423	...	...	...
Number of inspections by day, ... ..	13	...	...	650	...	...	...
Number of inspections by night, ... ..	...	...	...	28	...	...	...
Number of irregularities, ... ..	...	...	...	21	...	...	...
Number of prosecutions, ... ..	...	...	...	...	...	...	...
<b>3. Boarding Houses for Emigrants and Seamen.</b>							
Number measured and registered, ... ..	...	...	...	...	...	...	...
Total number now on register, ... ..	...	...	...	...	...	...	...
With accommodation for ... ..	...	...	...	...	...	...	...
Number of inspections by day, ... ..	...	...	...	...	...	...	...
Number of inspections by night, ... ..	...	...	...	...	...	...	...
Number of irregularities, ... ..	...	...	...	...	...	...	...
Number of prosecutions, ... ..	...	...	...	...	...	...	...
<b>4. Houses Let in Lodgings.</b>							
Number measured and registered, ... ..	...	...	...	...	...	...	...
Total number now on register, ... ..	...	...	2	2	5	1	...
Number of inspections by day, ... ..	...	...	14	1	2	...	...
Number of inspections by night, ... ..	...	...	1	9	...	...	...
Number of irregularities, ... ..	...	...	...	...	...	...	...
Number of prosecutions, ... ..	...	...	...	...	...	...	...
<b>5. Farmed-out Houses.</b>							
Number measured and registered, ... ..	...	...	...	16	...	...	...
Total number now on register, ... ..	...	...	...	170	41	...	...
Number of inspections by day, ... ..	...	...	...	2,188	70	...	...
Number of inspections by night, ... ..	...	...	...	411	75	...	...
Number of irregularities, ... ..	...	...	...	85	4	...	...
Number of prosecutions, ... ..	...	...	...	...	...	...	...
Number of successful, ... ..	...	...	...	...	...	...	...
Amount of fines, ... ..	...	...	...	...	...	...	...
<b>6. Ticketed Houses.</b>							
Number ticketed for first time, ... ..	...	...	...	...	...	...	...
Total number now on register, ... ..	173	313	899	1,523	992	296	40
Number of visits for ticketing and re-ticketing, ... ..	...	...	...	...	...	...	...
Number of inspections by night, ... ..	463	664	1,949	3,071	2,660	909	120
Number of cases of Overcrowding found and warned, ... ..	78	102	274	430	347	106	17
Number of prosecutions, ... ..	...	...	...	...	...	...	...
Cubic feet of space in worst cases of Overcrowding, instead of 400, only, ... ..	187	152	117	125	154	173	222
Number of cases of Overcrowding in houses under 900 cubic feet of space, ... ..	...	...	8	31	5	...	...
<b>7. Tents and Vans.</b>							
Number of inspections, ... ..	158	45	2	31	449	1,787	14
Number of irregularities, ... ..	2	...	...	1	...	28	...





[illegible]

TABLE XXIII.—(c) SUMMARY OF OPERATIONS OF SANITARY

District.	EASTERN.						
Ward.	1	2	3	4	5	6	7
8. Workshops (excluding Bakehouses).							
Number measured and registered, ... ..	...	...	12	3	10	7	...
Total number now on register, ... ..	57	54	76	153	62	54	36
Number of inspections, ... ..	144	158	205	1,069	307	293	85
Number found dirty, ... ..	7	6	11	8	2	6	4
Number found Overcrowded, ... ..	...	...	...	...	...	...	...
Number found defective in light or ventilation, ... ..	...	...	...	2	...	...	...
Number found with inadequate or defective W.C. or sink accommodation, ... ..	...	...	...	...	...	...	...
Number of other nuisances, ... ..	3	2	...	10	5	1	1
Number of prosecutions, ... ..	...	...	...	...	...	...	...
9. Bakehouses.							
Registered during year, ... ..	1	...	6	...	...	7	...
Total number now on register, ... ..	8	17	20	22	15	6	6
Number of inspections, ... ..	51	39	111	129	184	116	86
Number found dirty, ... ..	1	3	2	4	1	3	...
Number of other nuisances, ... ..	2	...	...	2	...	...	...
Number of prosecutions, ... ..	...	...	...	...	...	...	...
10. Homeworkers' Dwellings.							
Total number now on register, ... ..	4	12	13	19	12	8	6
Number of inspections, ... ..	12	31	114	60	182	17	19
Number found dirty, ... ..	...	...	...	...	...	...	...
11. Piggeries.							
Total number now on register, ... ..	1	6	...	...	...	1	...
Number of inspections, ... ..	9	29	...	...	...	76	...
Number found dirty, ... ..	...	2	...	...	...	...	...
Number of other nuisances, ... ..	...	...	...	...	...	...	...
Number of prosecutions, ... ..	...	...	...	...	...	...	...
12. Offensive Trades.							
Total number now on register, ... ..	9	2	3	8	1	18	2
Number of inspections, ... ..	41	50	33	157	48	492	183
Number of irregularities, ... ..	1	1	...	1	...	28	5
Number of prosecutions, ... ..	...	...	...	...	...	...	...
13. Rag Flock Act, 1911.							
Total number of visits,... ..	...	...	...	...	...	...	...
Samples submitted for analysis, ... ..	...	...	...	...	...	...	...
Certified not to conform to standard, ... ..	...	...	...	...	...	...	...
Number of prosecutions, ... ..	...	...	...	...	...	...	...
Number of convictions, ... ..	...	...	...	...	...	...	...
14. Brokers' Premises.							
Total number of visits,... ..	22	13	66	103	78	10	...
15. Infectious Diseases.							
Total number of visits,... ..	2,935	4,004	4,964	4,885	3,061	1,961	1,451
16. Housing Acts.							
Total number of visits,... ..	494	626	3,232	4,129	2,320	424	105



## SECTION FOR THE YEAR 1929—Continued.

## NORTHERN.

8	9	10	11	17	18	19	20	21
3	12	3	2	9	29	4	7	2
21	45	14	73	113	117	53	19	41
93	182	82	195	254	442	109	73	197
3	8	6	1	12	12	2	1	6
...	...	...	...	...	...	...	...	...
...	...	...	...	...	1	...	...	...
...	...	...	...	1	1	...	...	1
...	...	2	1	...	2	...	...	2
...	...	...	...	...	...	...	...	...
1	1	1	1	...	2	...	...	...
6	5	2	8	17	24	11	6	5
10	24	4	15	47	102	23	13	18
1	5	...	...	15	7	1	...	1
...	1	...	1	...	1	...	...	...
...	...	...	...	...	...	...	...	...
11	15	5	21	34	16	21	10	6
10	18	6	22	20	19	23	7	5
...	...	...	...	...	...	...	...	...
4	2	2	...	2	...	6	...	11
8	4	25	...	8	...	20	1	40
...	2	7	...	...	...	3	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
3	...	...	1	9	...	1	...	1
13	...	...	6	52	6	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	1	...	...	12	2	5	...	3
...	1	...	...	6	...	...	...	1
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
2	10	1	6	7	10	3	5	9
3,830	2,322	2,289	2,477	3,828	3,834	3,095	1,332	2,380
609	66	111	276	671	544	420	123	649

TABLE XXIII.—(c) SUMMARY OF OPERATIONS

CENTRAL.								
12	13	14	15	16	22	23	24	25
12	31	5	11	11	4	9	2	6
304	432	79	209	158	77	113	56	83
3,536	1,882	444	958	591	237	322	115	152
27	101	2	20	16	...	5	1	3
...	...	1	...	...	...	...	...	...
2	2	...	...	1	...	1	...	...
6	2	3	1	...	...	...	...	...
151	49	19	25	12	2	3	2	...
...	...	...	...	...	...	...	...	...
7	1	...	3	3	...	1	...	1
20	5	8	17	6	3	21	8	12
69	95	23	149	44	15	123	43	62
16	11	6	16	7	...	2	1	1
2	7	3	15	4	...	6	1	...
...	...	...	...	...	...	...	...	...
7	5	5	5	3	1	2	3	1
149	81	1	22	13	3	13	18	8
1	...	...	...	...	...	...	...	...
...	...	...	...	...	5	...	...	5
...	...	...	...	...	37	...	...	48
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
2	...	1	...	...	...	...	...	...
19	...	1	1	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
45	8	2	...	10	...	2	1	2
14	3	...	...	...	...	2	1	2
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
8	2	1	...	...	...	8	...	...
1,671	1,169	11,874	1,574	1,240	852	1,255	1,894	2,770
583	681	713	651	123	15	135	60	17

[illegible]

TABLE XXIII.—(c) SUMMARY OF OPERATIONS OF SANITARY

Division.  Ward.	EASTERN.						
	1	2	3	4	5	6	7
<b>17. Work of Female Inspectors—</b>							
Under the Glasgow Corporation (Police) Order, 1904.							
<b>(a) Verminous Children.</b>							
Number of visits to schools, ... ..	112	97	156	226	86	28	31
Number of children submitted for inspection, ... ..	2,429	2,904	3,917	4,124	3,399	835	783
Number of children found infested, ...	5	22	10	5	67	11	7
Number of children found infected, ...	79	65	200	177	244	54	46
Number of children found with fleas, ...	8	23	20	23	15	4	5
Number of children found dirty, ...	19	19	64	78	75	23	25
Number of written notices, ... ..	5	22	8	9	75	10	7
Number of children cleaned by Guardians, ... ..	102	123	62	88	451	102	125
Number of children cleaned by officers,	...	...	...	...	...	...	...
<b>(b) Homes of Verminous Children.</b>							
Number of houses inspected, ... ..	193	252	271	301	231	169	31
Number of houses in which lodgers were found, ... ..	...	1	1	2	...	...	...
Number of houses found dirty, ... ..	12	7	3	8	9	6	...
Number of houses with dirty bedding,	15	9	3	7	9	4	1
Number of written notices, ... ..	27	16	6	15	18	10	1
Number of re-inspections, ... ..	24	15	62	86	148	92	39
Number of houses found cleaned, ...	14	10	2	7	7	9	...
Number of bedding found cleaned, ...	12	13	2	7	9	5	1
<b>(c) House-to-House Visitation.</b>							
Number of houses visited first time, ...	964	1,705	2,853	4,153	3,960	1,964	262
Number of houses in which lodgers were found, ... ..	23	38	5	23	44	24	...
Number of houses found dirty, ... ..	22	24	24	42	65	31	6
Number of houses with dirty bedding,	5	16	11	20	18	9	1
Number of houses—Written notices, ...	27	40	29	46	76	32	6
Number of houses—Re-visits, ... ..	21	33	32	93	117	47	7
Number of houses found dirty, ... ..	12	28	26	62	68	31	5
Number of houses—Bedding found cleaned, ... ..	10	16	10	20	20	6	1
<b>(d) Re-housing Scheme Visitation.</b>							
Number of houses visited first time, ...	223	7,156	...	2	...	2	1,304
Number of houses in which lodgers were found, ... ..	8	75	...	...	...	...	1
Number of houses found clean, ... ..	113	4,243	...	2	...	2	1,061
Number of houses found fair, ... ..	103	2,564	...	...	...	...	195
Number of houses found unsatisfactory,	7	313	...	...	...	...	45
Number of houses found dirty, ... ..	...	36	...	...	...	...	3
Number of houses with dirty bedding,	...	4	...	...	...	...	1
Number of written notices, ... ..	...	38	...	...	...	...	4
Number of re-visits, ... ..	20	414	...	...	...	...	103
Number of houses found cleaned, ...	16	328	...	...	...	...	92
Number of bedding found cleaned, ...	1	7	...	...	...	...	1
<b>(e) Other Work.</b>							
Number of nuisances reported by Female Inspectors, ... ..	27	145	8	24	46	22	15
Number of infectious disease cases reported by Female Inspectors, ...	...	2	...	...	...	...	...

## ECTION FOR THE YEAR 1929—Continued.

## NORTHERN.

8	9	10	11	17	18	19	20	21
47	14	46	50	74	57	40	7	48
842	232	352	507	771	1,047	309	31	658
14	2	3	23	17	27	11	...	17
270	46	113	179	242	236	73	11	170
54	6	29	33	40	38	21	...	16
67	7	30	55	42	86	17	9	54
14	1	2	20	17	22	8	...	12
423	68	170	254	334	377	115	17	220
...	...	...	...	...	...	...	...	...
249	56	124	121	331	327	200	77	192
...	...	...	...	2	21	15	8	13
9	1	7	8	10	14	5	3	5
1	1	2	2	16	10	...	1	3
...	...	...	3	4	...	...	...	...
7	1	11	11	66	43	5	5	6
3	1	6	3	10	10	4	3	3
...	...	2	2	15	9	...	...	1
2,494	170	483	1,127	2,012	2,134	1,171	394	987
62	4	18	61	136	178	100	35	106
117	5	25	52	82	85	34	7	24
13	1	3	10	25	14	3	4	8
2	...	...	...	...	2	...	...	...
254	7	54	135	360	192	56	11	46
132	6	25	54	78	77	32	5	29
8	1	4	8	25	13	3	5	4
3,943	7	778	...	...	...	4,187	...	160
14	...	8	...	...	...	237	...	...
2,423	7	625	...	...	...	2,915	...	81
1,419	...	138	...	...	...	1,115	...	70
100	...	15	...	...	...	154	...	9
1	...	...	...	...	...	3	...	...
1	...	...	...	...	...	2	...	...
1	...	...	...	...	...	3	...	...
144	...	17	...	...	...	382	...	10
93	...	14	...	...	...	145	...	9
1	...	...	...	...	...	3	...	...
3	...	...	...	2	9	7	4	14
...	...	...	...	...	1	1	...	...





## OF SANITARY SECTION FOR THE YEAR 1929—Continued.

SOUTH-EASTERN.							SOUTH-WESTERN.					CITY. 1929.	1928.
26	27	33	34	35	36	37	28	29	30	31	32		
122	150	11	68	43	...	10	97	133	124	59	16	2,121	2,122
2,263	2,664	22	645	581	...	44	920	2	3,834	650	176	39,271	39,675
17	111	3	37	31	...	4	45	118	159	30	8	853	970
227	135	4	20	30	...	1	85	214	346	73	7	3,667	4,625
40	81	...	20	19	...	1	60	63	16	4	...	768	862
46	150	2	19	20	...	4	41	70	52	2	4	1,212	1,393
327	477	9	96	100	...	10	92	179	163	30	10	1,769	2,006
332	454	7	78	93	...	11	157	512	758	145	51	6,216	6,150
...	...	...	...	...	...	...	...	...	...	...	...	...	4
183	364	5	59	43	...	10	418	487	631	85	29	6,704	6,986
...	8	...	1	2	...	...	...	30	101	3	4	294	357
11	29	...	9	4	...	1	...	3	...	...	...	187	167
3	36	...	9	5	...	1	8	6	...	...	...	165	136
...	...	...	...	...	...	...	...	9	...	...	...	110	70
21	62	1	15	8	...	2	...	7	...	...	...	769	1,163
10	24	1	12	4	...	1	...	3	...	...	...	164	149
5	31	1	9	4	...	1	...	6	...	...	...	144	115
1,206	3,706	5	7	21	2	...	2,819	820	1,518	70	525	65,974	63,661
55	308	...	...	...	...	...	136	58	202	5	13	3,681	5,133
51	160	1	...	1	...	...	7	3	...	...	...	1,045	1,147
11	43	1	...	1	1	...	...	1	...	...	...	319	389
...	7	2	...	...	...	...	6	4	...	...	1	304	365
102	340	6	...	3	2	...	9	4	...	...	5	2,335	2,734
48	168	1	...	1	...	...	6	3	...	...	1	1,072	1,198
9	48	1	...	1	1	...	...	1	...	...	1	302	390
1,837	...	...	...	1,810	...	...	25	910	...	...	...	23,691	17,521
10	...	...	...	3	...	...	...	...	...	...	...	405	663
1,501	...	...	...	1,612	...	...	24	895	...	...	...	16,669	12,501
311	...	...	...	197	...	...	1	11	...	...	...	6,302	4,020
23	...	...	...	...	...	...	...	2	...	...	...	672	761
2	...	...	...	1	...	...	...	2	...	...	...	48	102
2	...	...	...	1	...	...	...	...	...	...	...	11	20
...	...	...	...	2	...	...	...	...	...	...	...	48	68
203	...	...	...	147	...	...	...	...	...	...	...	1,440	2,008
27	...	...	...	...	...	...	...	...	...	...	...	724	962
3	...	...	...	...	...	...	...	...	...	...	...	16	21
...	2	...	...	...	...	...	5	...	1	...	...	334	268
...	...	...	...	...	...	...	...	...	...	...	...	4	7

TABLE XXIV.—GLASGOW.—POPULATION; BIRTHS AND DEATHS; BIRTH-RATE AND DEATH-RATES PER 1,000; ALSO DEATHS UNDER 1 YEAR, AND DEATH-RATE PER 1,000 BIRTHS SINCE 1860.

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year	
						Number.	Rate per 1,000 Births.
1860†	389,843	15,943	12,436	40·8	31·9	2,905	182
1861	397,673	16,537	10,936	41·6	27·5	2,544	154
1862	405,789	16,400	11,565	40·4	28·5	2,562	156
1863	413,944	16,986	13,329	41·0	32·2	2,774	163
1864	420,738	17,411	13,674	41·4	32·5	3,051	175
1865	428,123	17,956	13,914	41·9	32·5	3,097	173
1866	437,850	18,288	12,829	41·8	29·3	2,905	159
1867	446,028	18,347	12,578	41·1	28·2	2,895	158
1868	455,000	18,607	13,832	40·9	30·4	3,127	168
1869	464,332	18,495	15,648	39·8	33·7	3,411	184
1870	471,453	19,355	13,955	41·1	29·6	2,991	155
1871	491,900	18,867	15,790	38·4	32·1	3,608	191
1872	494,824	20,158	14,053	40·7	28·4	3,198	159
1873	494,847	19,487	14,499	39·4	29·3	3,255	167
1874	498,270	20,039	15,845	40·2	31·8	3,240	162
1875	499,480	20,825	15,384	41·7	30·8	3,388	163
1876	502,299	20,981	13,763	41·7	27·4	3,166	151
1877	504,487	21,124	13,823	41·9	27·4	3,106	147
1878	507,420	20,622	14,157	40·6	27·9	3,285	159
1879	508,048	19,751	12,498	38·8	24·6	2,504	127
1880	509,732	18,912	13,304	37·1	26·1	2,842	150
1881	512,034	19,106	12,916	37·3	25·2	2,745	144
1882	517,904	19,735	13,046	38·1	25·2	2,959	150
1883	523,154	19,911	14,577	38·1	27·9	3,091	155
1884	528,459	20,557	13,942	38·9	26·4	3,094	151
1885	533,817	19,861	13,492	37·2	25·3	3,100	156
1886	539,231	19,862	13,104	36·8	24·3	2,786	140
1887	544,700	19,328	12,135	35·5	22·3	2,676	138
1888	550,226	19,309	11,681	35·1	21·2	2,560	133
1889	555,808	19,503	13,139	35·1	23·6	3,008	154
1890	561,447	19,279	13,374	34·3	23·8	2,880	149
1891	567,143	19,857	14,324	35·0	25·3	2,946	148
1892	669,059*	22,815	15,218	34·1	22·7	3,168	139
1893	677,883	23,173	15,798	34·2	23·3	3,649	157
1894	686,820	22,644	13,673	34·0	19·9	2,937	130
1895	695,876	22,803	16,344	32·8	23·5	3,538	155
1896	705,052	24,029	14,385	34·1	20·4	3,278	136
1897	714,919	23,880	15,727	33·4	22·0	3,826	160
1898	724,349	24,262	15,333	33·5	21·2	3,792	156
1899	733,903	24,249	15,828	33·0	21·6	3,696	152
1900	743,969	24,362	16,393	32·7	22·0	3,778	153
1901	761,925	24,206	16,197	31·8	21·2	3,607	149
1902	762,789	24,722	15,532	32·4	20·4	3,206	129

\* Extended City.

† For earlier years, see Report for 1910, Table liii.

TABLE XXIV.—*Continued.*

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1903	763,654	25,135	15,073	32.9	19.7	3,663	146
1904	764,521	24,754	15,414	32.4	20.2	3,606	146
1905	765,389	24,316	14,460	31.8	18.9	3,195	131
1906	780,192*	24,560	14,889	31.5	19.1	3,223	131
1907	781,080	24,006	15,659	30.7	20.0	3,116	130
1908	781,969	23,915	15,265	30.6	19.5	3,284	137
1909	782,860	23,140	15,242	29.6	19.5	3,073	133
1910	783,785	22,222	13,395	28.4	17.1	2,694	121
1911	784,680	21,755	13,899	27.7	17.7	3,016	139
1912	785,600	22,044	13,797	28.1	17.6	2,740	124
1913†	1,021,789*	28,688	17,693	28.1	17.3	3,706	129
1914	1,028,440	29,462	17,522	28.6	17.0	3,913	133
1915	1,035,091	27,943	20,159	27.0	19.5	4,007	143
1916	1,041,742	27,094	16,601	26.0	15.9	2,996	111
1917	1,048,393	24,030	16,691	22.9	15.9	3,089	129
1918	1,055,044	23,524	18,362	22.3	17.4	2,660	113
1919	1,061,695	25,835	18,237	24.3	17.2	2,937	114
1920	1,068,346	32,626	16,765	31.5	15.7	3,477	107
1921	1,075,000	29,712	15,625	27.6	14.5	3,138	106
1922	1,081,933	28,298	17,850	26.2	16.5	3,401	120
1923	1,088,987	26,710	14,875	24.5	13.7	2,388	89
1924	1,095,969	25,330	16,868	23.1	15.4	3,005	119
1925	1,097,841	25,416	15,336	23.2	14.0	2,591	102
1926	1,121,546*	24,541	15,731	22.1	14.2	2,548	104
1927	1,130,675	23,578	15,439	20.9	13.7	2,527	107
1928	1,147,108	23,649	15,701	20.6	13.7	2,525	107
1929	1,160,720	22,799	17,760	19.6	15.3	2,438	107

\* Extended City.

† Births and Deaths from 1913 are corrected for transfers.





PART II

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ANNUAL REPORTS

OF

FEVER AND TUBERCULOSIS  
HOSPITALS AND SANATORIA

*FOR THE YEAR*

**1929**

## BELVIDERE FEVER HOSPITAL.

The admissions to Hospital for the year 1929 numbered 5,694, a figure slightly under the average for the three previous years.

On January 1, 1929, there remained in Hospital from the previous year 665 patients. During 1929, 5,744 were treated to a conclusion. Of these, 4,999 were discharged well or improved, and 745 died; 173 were received in a practically moribund condition and died within forty-eight hours. The general mortality rate was 13 per cent. The average duration of residence of patients who recovered was 40 days; in fatal cases 11 days.

The number of patients treated for Scarlet Fever—1,429—was slightly in excess of the figure for 1928, but well within the average. In Diphtheria there was a marked diminution, the number being 881, in contrast with 1,139 in 1928, and 1,249 in 1927.

Cases of Pneumonia dealt with numbered 1,572. The average figure for the three previous years was 1,410. The high mortality in Pneumonia and its increased incidence, in conjunction with the reduced incidence of Diphtheria and Scarlet Fever—diseases in which a relatively low mortality prevails—accounted for the increase in the general mortality rate from 12·8 per cent. in 1928 to 13 per cent. in 1929.

The number of diseases for which hospital accommodation is required continues to increase. During the first and last quarters of the year great difficulty was experienced in suitably accommodating the different diseases and their many diverse combinations. The total accommodation available for the observation of doubtful cases and for the economical housing of mixed or unusual cases is limited to 34 beds grouped in eight different compartments of an observation pavilion. It has proved wholly inadequate to meet the requirements. Fortunately, a new observation pavilion of 34 beds is in course of erection and it should do much to ease the situation. During the last quarter of the year, when Measles was prevalent, many cases of Pneumonia, Scarlet Fever and Diphtheria were admitted while incubating Measles, and a considerable amount of cross infection occurred. Among young children, especially those notified as Diphtheria or Pneumonia, the early pre-rash signs of Measles were frequently observable on admission and extreme difficulty was found in making suitable provision for these cases. The hospitalization, during a Measles epidemic, of children suffering from Pneumonia has made new demands, and has emphasised the lack of isolation accommodation. At such times, a high percentage of the admissions under five years of age, especially those notified as Laryngeal Diphtheria

or Membranous Croup, Pneumonia, and Whooping-cough, are either exposed to, incubating, or already in the early stage of Measles. It is not too much to say that individual isolation accommodation is desirable for all such cases for at least ten days after admission. Under present conditions only a very small proportion of these cases can be isolated, and, in spite of the most scrupulous care and constant vigil, cross infection occurs with all its attendant risks and anxiety. In the hospital summary for 1927 this subject was referred to, but its importance is my plea for again bringing it to notice.

*Physical Condition of Admissions.*—Little change falls to be recorded under this heading. There was certainly a diminution in the incidence of Rickets, which is now relatively infrequent. Enteritis, however, was prevalent, especially in young children admitted with chest conditions, and bacillary dysentery was detected in a few cases. Most of the children were reasonably well nourished, but many were dirty and verminous and suffered from septic sores or discharges.

*Scarlet Fever.*—During the year, 1,429 cases were treated to a conclusion; of these, 11 died. The mortality rate was 0·8 per cent., the same as was recorded in 1928. With very few exceptions the cases were of the "simple" type, but they varied considerably in severity. On the whole, the type was rather more severe than that which prevailed in 1928. Septic cases were rarely seen and were practically confined to those cases where the early diagnosis had been in doubt and who were admitted late to hospital with the septic manifestations already present. The early exhibition of scarlatinal antitoxin has undoubtedly lessened the incidence of septic Scarlet Fever in the wards, and the tragedy of the "simple" case becoming "septic"—a not very infrequent occurrence in pre serum days—does not now exist. Toxic cases were few, and only one death was recorded from true toxic Scarlatina. Two of the eleven deaths were due to Pneumonia complicating Scarlet Fever, and one was due to Streptococcal Meningitis. Measles and Enteritis was a contributory cause in one of the fatal cases. Four deaths were due to Septic Scarlet Fever and two to Nephritis and Uræmia. During the year, free use was made of Scarlatinal antitoxin in all but mild cases. The intramuscular route was the routine method of administration, but in severe cases the intravenous method was employed. There is no longer any dubiety as to the benefit of serum treatment. In many cases the results are dramatic; in all but a very small minority it is markedly beneficial. Extensive prophylactic use was made of scarlatinal antitoxin among contacts of Scarlet Fever, and no case thus protected developed the disease.

Fourteen cases of Scarlet Fever were admitted while incubating other infections. Ten were incubating Chickenpox, three Measles,

and one Whooping-cough. 21 cases were found on admission to be suffering from both Scarlet Fever and Diphtheria.

*Schultz-Charlton Reaction.*—This reaction is ineffective in cases with rashes of more than 72 hours' duration, and its usefulness is limited, since most doubtful cases come under observation too late for its employment. It was, however, used to some extent as an aid to diagnosis. In the same way also the Dick Test proved helpful.

*Scarlet Fever and Diphtheria.*—As in past years, a considerable number of cases of Mixed Infection with these diseases came under treatment. Diphtheria wards were occasionally exposed to Scarlet Fever, and Scarlet Fever wards to Diphtheria, but rarely in either instance did secondary cases arise, and very little "bed loss" was occasioned. The practice pursued in each instance was to passively immunise susceptible contacts with the appropriate serum, and in this prophylactic capacity scarlatinal antitoxin proved a remarkable boon.

*Diphtheria.*—The number of patients treated totalled 881. There were 58 deaths. The mortality rate was 6.6 per cent., considerably higher than in the three previous years. The type of the disease was definitely more severe, especially during the first and last quarters of the year, when many cases were admitted with very extensive lesions. Larger doses of serum were employed—in some cases as much as 80,000 units—and administration by the intravenous route was frequently resorted to. Of the 58 fatal cases, 30 were moribund on admission and nine were complicated with Pneumonia. 18 of the fatal cases were severe examples of Laryngeal Diphtheria, in which tracheotomy was performed without relief.

Fifteen cases certified as Diphtheria were found on admission to be suffering coincidently from other diseases, and 13 cases were admitted already infected with and incubating other zymotic diseases. No less than 114, or 12.9 per cent., of the total cases were erroneously certified. While it was possible to treat some of these cases without risk to themselves in Diphtheria wards, isolation had to be provided for many, and much difficulty was experienced in doing so on account of the very limited accommodation available.

*Schick Test and Dick Test.*—As in previous years, probationer nurses joining the staff were offered the Schick Test. The number tested was smaller than usual, but the percentage who reacted positively was greatly increased, being approximately 50 per cent. Positive reactors received the full immunising course, and no case of Diphtheria occurred among those immunised nor among the negative reactors.

As hitherto, the Dick Test was employed chiefly among patients, and no systematic use of it was made among the staff. If it could be

instituted and immunisation carried out before new probationer nurses actually take up residence in the hospital, it might be helpful, but there are many difficulties in the way of such a scheme. Among patients it was chiefly used as an aid to diagnosis, as was also the Schultz-Charlton Test.

*Pneumonia.*—1,572 cases of Pneumonia were treated with 354 deaths. 80, or 23 per cent. of the fatal cases, were moribund on admission. The mortality rate, 22·5 per cent., was about the same as in 1928, and was considerably influenced by the very heavy mortality which prevailed at the beginning of the year. The following figures show the mortality rates, together with the cases moribund on admission, in the various age groups:—

	-1	-2	-3	-4	-5	-10	-15	-25	-35	-45	+45	Total.
Total treated, ...	227	288	165	89	59	208	80	127	93	88	148	1,572
Total deaths, ...	101	73	23	12	5	8	5	9	12	30	76	354
Mortality rate, ...	44%	25%	14%	13%	8%	4%	6%	7%	13%	34%	51%	22·5%
Moribund on admission, ...	23	13	3	2	—	1	1	—	4	6	27	80
Percentage of total deaths moribund on admission, ...	23%	18%	13%	17%	—	13%	20%	—	33%	20%	36%	23%

One hundred and seventy-four of the total deaths occurred in babies under two years of age, and 76 were in patients over 45 years of age. Over 70 per cent. of the total deaths, therefore, occurred in these age groups. I have in previous reports laid stress on the increasing number of very young infants sent to hospital with Pneumonia. Many of these children are breast fed, and removal from their natural environment and the substitution of artificial feeding undoubtedly militates against them. 515 of the 1,572 cases treated were under two years of age and the mortality in this group was 33·8 per cent., contrasted with a mortality of 11·4 per cent. in patients between two and 45 years of age.

*Types.*—With regard to type, there was a slight increase in the bronchial cases compared with the previous year, especially during and following the influenzal period which prevailed at the beginning of the year. The lobar variety predominated in adults, and the bronchial type in children. Among 828 patients under five years, 793 bronchial and 35 lobar cases were recorded. In 596 cases between five and 45 years, 361 were lobar and 235 bronchial. In 148 patients over 45 years, 85 were lobar and 63 bronchial.

It was noted that bronchial cases were again more frequent in females than in males.

While the majority of the cases clinically exhibited the usual symptomatology of their types, a considerable number were more or less atypical, notable among these being lobar cases with prolonged pyrexia in which crisis was delayed beyond the 12th day, In a smaller



group of lobar cases with typical physical signs, the disease aborted early and crisis occurred within three or four days. In a few cases, crisis associated with marked improvement in the patient's condition occurred about the usual period, but the physical signs of consolidation remained well marked for several days longer.

The high percentage of cases admitted "in extremis" has already been noted. Almost one-fourth of the total fatal cases were hopelessly ill when received and many died within 12 hours. In previous reports I have emphasised the serious effect of removal on patients so gravely ill, and in those nearing crisis. In many of such cases no adequate attention was possible in the patient's homes, but there is no doubt that home nursing, if at all practicable, is to be preferred. Modern motor transport has done much to mitigate the serious effect of removal, but, however carefully and expeditiously it is carried out, it is apt to be followed by more or less serious collapse.

*Measles.*—Only 118 cases of Measles came under review. Of these, 15 died, the mortality rate being 12·7 per cent. A large number of the cases when received were already complicated by Pneumonia, and varying degrees of Bronchitis and Enteritis were also frequent features. In view of this the mortality must be regarded as relatively low, and it compares favourably with the prevailing figures for the previous three years. The disease itself was of mild type, but was increasing considerably in incidence and severity towards the end of the year. At this period difficulty was experienced in excluding Measles from other wards, notably Diphtheria and cot Pneumonia wards. Croup was a frequent early symptom, and many such cases were notified as Diphtheria and were received in hospital before Koplik's spots were apparent. The difficulty in diagnosis was intensified by the fact that injection of the palpebral conjunctiva and general catarrhal symptoms—two of the recognised early features of Measles—were also abundantly present among the admissions for diseases other than Measles.

The serum of convalescents was collected when circumstances were suitable and when voluntary donors were available. Adults only were approached for this purpose. The serum collected was stored and utilised with great success in the protection of children exposed to Measles.

*Enteric Group.*—There was a slight increase during the year in this group. 49 verified cases were treated to a conclusion, about half of them being examples of Paratyphus B. Five deaths occurred, giving a mortality rate of 10·2 per cent., 24 were true B. typhus infections, and 25 belonged to the Paratyphus B. group. The mortality in the former was 12·5 per cent., in the latter 8·0 per cent.

Thirty five cases, or 42 per cent. of the total, notified as one or other of the Enteric group were certified in error. The following shows the revised diagnoses in these cases:—

Pneumonia, ... ..	8	Bronchitis, ... ..	2
Influenza, ... ..	5	Bronchiectasis, ... ..	1
Dysentery (Bacillary), ... ..	1	Acute Nephritis, ... ..	1
Enteritis, ... ..	2	Intestinal Stasis, ... ..	1
Tuberculosis—		Pyelitis, ... ..	1
Tuberculous Peritonitis, ... ..	1	Perinephritic Abscess, ... ..	1
"          Meningitis, ... ..	2	Ulcerative Colitis, ... ..	1
Abdominal Tuberculosis, ... ..	1	Bacilluria and Lichen Planus, ... ..	1
Cerebral Tuberculoma, ... ..	1	Quinsy and Cellulitis, ... ..	1
Gastritis, ... ..	1	Otitis Media and Pyuria, ... ..	1
Scarlet Fever, ... ..	1		
Tumour of Bowel, ... ..	1		35

*Whooping-cough*.—271 cases were treated to a conclusion, there being 76 deaths. The mortality rate was 28 per cent., which, although still high, is considerably less than that recorded last year. In many of the cases Broncho-pneumonia and Enteritis were present on admission. Treatment with calcium sodium lactate was continued and was frequently associated with benefit.

*Cerebro-spinal Fever*.—There was a considerable increase in the number of cases of Cerebro-spinal Fever. In all, 80 were treated to a conclusion. For a brief period the disease appeared as if it would assume epidemic form. A group of associated cases, all of the fulminant type with well marked petechial rashes, was encountered, three fatal cases being in the same family. The mortality rate, always high, was markedly increased, being 80 per cent. Of 29 children under two years, 28 died; among 51 patients in other age groups, 36 deaths occurred. 79 cases were erroneously certified as Cerebro-spinal Fever; these included 20 cases of Pneumonia and 25 cases of Tuberculous Meningitis.

*Chickenpox*.—This disease was prevalent throughout the year, and 213 cases were treated. Many were admitted from other institutions and were suffering concurrently from other conditions, in some instances necessitating prolonged stay in hospital. Profuse eruptions were common. Four cases were of the gangrenous type.

*Puerperal Fever*.—Although the last two reports have contained a fairly full summary of the work of the Puerperal Fever Wards, it may not be amiss, in view of the continued and increasing interest in this subject, to again summarise the work of this department. During the greater part of the year these wards have been under the care of Dr. Margaret Thomas, who has been good enough to draft the following summary of her work.

There were 339 confirmed cases of Puerperal Sepsis, and 33 cases of altered diagnosis. This represents a total of 372 patients treated during the year.

This summary is based on dismissals during the year, and includes admissions from January till November, 1929, in addition to most of the women who had been admitted in December, 1928. A few patients with chronic infections, who had been admitted prior to December,

1928, were dismissed in 1929, and are therefore covered by the period under review.

The monthly admissions, who were discharged during the year, were as follows:—

						Fatal Cases.
1929.	January,	...	...	...	30	6
	February,	...	...	...	25	7
	March,	...	...	...	29	7
	April,	...	...	...	30	6
	May,	...	...	...	23	5
	June,	...	...	...	27	5
	July,	...	...	...	21	1
	August,	...	...	...	24	3
	September,	...	...	...	26	6
	October,	...	...	...	36	8
	November,	...	...	...	39	9
1928.	December,	...	...	...	23	—
1928.	Prior to December,	...	...	...	6	—
					<u>339</u>	<u>63</u>

The number for November, 1929, does not represent the total admissions during that month, as many of these patients were still in hospital when the year ended. The increase in admissions in October and November is partly accounted for by the new regulations for notification, which came into force at that time. From the beginning of October onwards 10 patients per week were admitted. All of these women were ill, and, unfortunately, some were moribund when they came under hospital supervision.

#### ALTERED DIAGNOSES.

Thirty-three cases—8·8 per cent. of total notifications.

##### *Abortion—*

Threatened,	...	...	...	...	...	...	3
Inevitable,	...	...	...	...	...	...	5
Simple,	...	...	...	...	...	...	5
Incomplete,	...	...	...	...	...	...	7

##### *Lung Conditions—*

Lobar Pneumonia,	...	...	...	...	...	...	1
Pulmonary Phthisis,	...	...	...	...	...	...	1

##### *Kidney Conditions—*

Subacute Nephritis,	...	...	...	...	...	...	1
Chronic Nephritis,	...	...	...	...	...	...	1

##### *Pregnancy—*

Post-partum Insanity,	...	...	...	...	...	...	2
Premenstrual Pain,	...	...	...	...	...	...	1
Mastitis and Venereal Disease,	...	...	...	...	...	...	1

##### *General Conditions—*

Gangrenous Appendicitis and Peritonitis,	...	...	...	...	...	...	1
Ascites of unknown origin,	...	...	...	...	...	...	1
Muscular Rheumatism,	...	...	...	...	...	...	1
Chronic Endocarditis,	...	...	...	...	...	...	1
Chronic Endometritis,	...	...	...	...	...	...	1

Abortions formed the largest group of altered diagnoses. Most of them were certified as Septic Abortion and on examination no evidence

of sepsis was apparent. True cases of Septic Abortion are common, and many such cases are extremely ill and difficult to treat successfully; but there is a tendency to base the diagnosis of Sepsis only on the fact that the temperature is elevated, and while this is an important factor it does not by any means represent the whole question. The stress and alarm associated with an abortion is liable to give rise to a brief temporary pyrexia, which does not necessarily indicate Sepsis. Several of the women in this group of altered diagnoses had no febrile disturbance subsequent to admission, while none were febrile after the first day in hospital. Such patients cannot justly be regarded or treated as septic, and there is risk in introducing them to a Puerperal Fever Ward, where gross infection prevails. When such cases occur in maternity institutions it is obvious that removal is essential, but separate provision apart from definite septic cases is indicated. When in their own homes such patients may reasonably be observed there for a further period of twenty-four or forty-eight hours. The compulsory notification of puerperal pyrexia has created a new need, namely, separate cubicle isolation for the observation of these cases. Such accommodation is not at present available, but the emergency has been met by providing an ordinary ward in which the technique of bed isolation is very strictly observed.

<i>Confirmed Cases, 339.</i>						<i>Fatal Cases.</i>
<i>Age Distribution—</i>						
Under 15 years,	...	...	...	1	...	—
15 and under 20,	...	...	...	17	...	3
20     "      25,	...	...	...	80	...	14
25     "      30,	...	...	...	113	...	16
30     "      35,	...	...	...	70	...	13
35     "      40,	...	...	...	41	...	11
40     "      45,	...	...	...	15	...	4
45     "      50,	...	...	...	2	...	2
<hr/>						
339						63
<hr/>						<hr/>

It is noteworthy that although most of the cases were in the 25 to 29 group, this period gives the lowest death rate, the greatest percentage of deaths being at the extremes of age.

<i>Duration of Pregnancy—</i>						<i>Fatal Cases.</i>
Full time,	...	...	...	251	...	46
Premature Labour,	...	...	...	17	...	2
Miscarriage,	...	...	...	9	...	2
Abortion,	...	...	...	62	...	13

About 25 per cent. of the cases were abortions, and of these most were incomplete, retained products being present on admission. Delay in the treatment of these cases usually results in severe sepsis, and this is borne out by the fact that the percentage of fatal cases in this group is practically the same as among full time pregnancies.

*Sex Incidence.*—The sex incidence of the children born was as follows:—Male, 134; female, 129. Multiple births occurred in six instances, in each case twins.

*Marriage.*—Three hundred and ten were married, 29 single, the percentage of illegitimate births was therefore 8.6. The above factors do not appear to appreciably influence the incidence of infection.

<i>State at Birth—</i>					<i>Fatal Cases.</i>	
Alive, ...	...	...	...	243	...	40
Dead, ...	...	...	...	22	...	8
An Encephalic Monster, ...	...	...	...	1	...	1

More than a third of the cases of still-birth were associated with fatal infections. It should be kept in view, however, that still-births may result from long or difficult labours and that these are frequently followed by Puerperal Sepsis. Death of the fœtus may be regarded as an indication that other predisposing factors, *e.g.*, frequent vaginal examinations, manipulations, instrumental interference, exhaustion of the patient, etc., have also been present.

*Duration of Labour.*—This was ascertained from the patients themselves, and their statements may not have been altogether accurate. Fifteen women, however, gave a history of labour of less than two hours' duration; 35 stated that labour had lasted longer than 24 hours.

<i>Type of Labour in Full-time Cases—</i>					<i>Fatal Cases.</i>	
Natural Birth,...	...	...	...	200	...	30
Instrumental, with Chloroform, ...	...	...	...	57	...	15
Natural Birth, with Chloroform, ...	...	...	...	11	...	1
Breech Birth, ...	...	...	...	15	...	4
Face Presentation, ...	...	...	...	1	...	—

The greatest number were thus women who were without instrumental interference, and who did not even require an anæsthetic during childbirth. It is noteworthy, however, that this group provides the lowest death rate. The numerous instrumental cases, and the high mortality therein, should not necessarily be regarded as an argument against the use of forceps, as many of these patients had contracted passages and could not otherwise have been delivered save by induction of labour. It points rather towards the need for increasing ante natal care and more accurate determination of whether natural birth can occur, so that appropriate steps may be taken. Too often the doctor has obviously been faced with the difficulty of finding the patient in labour, but unable to deliver herself. In these circumstances forceps are resorted to, and conditions which greatly favour sepsis—laceration and bruising—are likely to result.

<i>Attendance at Birth—</i>					<i>Fatal Cases.</i>	
Doctor, ...	...	...	...	48	...	12
Midwife, ...	...	...	...	140	...	23
Doctor and Nurse, ...	...	...	...	72	...	18
Doctor called in for removal of Placenta or for stitches, ...	...	...	...	4	...	1
No one present, ...	...	...	...	43	...	10
Patients delivered in Maternity Hospitals or Homes, ...	...	...	...	32	...	5

The group of cases where no one had been present at the birth includes most of the abortions under review. The high death-rate







	Total Cases.
Staphylococci, B. Coli and Diphtheroids,...	1 —
Streptococci, Staphylococci, B. Coli and Diphtheroids,...	1 1
Gonococci and Staphylococci, ...	2 —
No Smear nor Growth obtained, ...	6 6

*Organisms obtained by Blood Culture.*

Hæmolytic Streptococci, ...	16	12
Staphylococcus Aureus, ...	3	—
Pneumococci, ...	3	3
Bacillus Coli, ...	2	1

Cultures were made from the blood in 20 other cases clinically septicæmic, with negative results.

The frequency with which the streptococcus was cultured from the cervix either alone or in combination with other organisms, and its comparatively greater incidence in the blood stream, bears out previous experience. The finding of this organism in the cervical smear is always of serious import.

*Termination of Illness—*

Complete recovery, ...	226
Death, ...	63
Irregular dismissal, ...	3
Patients dismissed with varying sequelæ—	
Chronic Albuminuria, ...	13
Thickened Limbs after Phlegmasia, ...	7
Chronic Pelvic Cellulitis, ...	6
Cardiac Murmurs, ...	6
Anæmia, ...	4
Chronic Discharges, ...	3
Chronic Arthritis, ...	2
Pulmonary Conditions, ...	2
Chronic Salpingitis, ...	1
Weakness of Limbs following Paralysis, ...	1
Patients transferred to other hospitals, ...	3

*Fatal Cases, 63=18.6 per cent.*

Duration of hospital treatment before death:—

Number of Days.												
1	2	3	4	5	6	7	8	9	10	—14	—21	+21
7	4	6	7	6	2	2	4	2	2	4	10	7
Number of Cases.												

Eleven patients died before they were 48 hours in hospital.

*Cause of Death—*

Septicæmia, ...	20
General Peritonitis, ...	12
Septicæmia and General Peritonitis, ...	5
Septicæmia and Broncho-pneumonia, ...	2
General Peritonitis and Pneumonia, ...	2
Pyæmia, ...	5
Broncho-pneumonia, ...	8
Lobar Pneumonia, ...	4
Pulmonary Embolism, ...	1
Chronic Intestinal Obstruction due to Peritonitis, ...	1
Cellulitis of Arm, ...	1
Generalised Thrombosis, ...	1
Bacterial Endocarditis and Pericarditis, ...	1

Septicæmia and General Peritonitis are thus responsible for most of the deaths, while the combination of Lobar Pneumonia with Puerperal Sepsis seems to be almost invariably fatal. Of the 17 cases of General Peritonitis, ten had laparotomy performed, and in seven others the visiting surgeon was called in consultation, but operative measures were not considered advisable. Death from Embolism is rare. Pyæmia is not now so common as it appears to have been in past years, but the five women who died from this complication had all been very ill from the day of admission and were found at *post-mortem* to have extensive thrombo-phlebitis of the pelvic veins with signs of multiple pulmonary infarctions.

*Treatment.*—During the past year several new methods of treatment were tried, but the treatment generally pursued may be summarised thus:—

(a) *Local Treatment.*—The establishment of uterine drainage by daily catheterization of the uterus and the injection of sterile glycerine into it.

(b) *General Treatment.*—The combating of toxæmia and septicæmia by means of:—

- (1) Arsenical preparations injected intramuscularly.
- (2) Antistreptococcal serum injected intravenously.
- (3) Preparations rich in Vitamin A given orally.

*Glycerine Treatment.*—Suitable cases doubtless derive great benefit, as where there is much laceration and sloughing discharges are apt to be locked up in the uterus, and the daily swabbing of the cervix promotes free drainage. Frequently also the cervix is apparently healthy and remains contracted, while the uterus becomes distended with pus. The daily drainage of the uterus by catheter is excellent in these cases. The glycerine which is injected daily into the uterus acts as a non-absorbable douche and as a stimulant to uterine contraction by reason of its hygroscopic action on the œdematous inflamed walls of the organ. As a douche it has none of the risks which saline irrigation undoubtedly has, no matter how carefully this is performed.

The disadvantages of the treatment are many. Women who have septicæmia, or even the slightest degree of peritoneal effusion, are unsuited for it, and since these women provide most of the fatal cases the adoption of glycerine treatment cannot be expected to affect the death rate to any extent. Glycerine injections were given daily to suitable cases, and 195 women were so treated. 1,201 injections were given in all, an average of 6.2 injections per patient. Many patients, however, received 10-13 injections.

*Arsenical Preparations.*—Sixty-three women who were seriously ill with streptococcal infections were given a course of intramuscular injections of the arsenical compound Metarsenobillon (M.A.B.). Although not so irritating as most of the arsenical preparations, this

drug caused much local pain, and the giving of a complete series of injections in each case called for much forbearance on the part of the patient. A fairly extensive trial of the treatment was made, but as the results were not conclusive, and on the whole disappointing, it was discontinued.

*Intravenous Serum Injections.*—Several septicæmic patients, from whose blood hæmolytic streptococci were isolated, were given anti-streptococcal serum (Scarlet Fever Type) directly into the blood stream. This injection was repeated daily for several days. Two of these women made good recoveries. Several other women, who were clinically septicæmic, had intravenous injections of serum, also with encouraging results.

*Vitamin A. Preparations.*—Oral administration of these preparations has found favour and given good results in other hands. Using the same technique, the treatment was instituted, but, so far, results have been disappointing, and any benefit accruing from the drugs seemed to be gradual rather than dramatic, as elsewhere reported. 19 patients were treated with Vitamin A. preparations.

*Other Methods of Treatment.*—Oral administration of ergot and quinine was prescribed in 123 cases. Antistreptococcal Serum (Scarlet Fever type) was injected intramuscularly in 127 cases. 16 patients were given serum of the Puerperal Fever type without apparent benefit. Saline irrigations of the uterus were given in 26 cases. This treatment has been almost entirely abandoned on account of its liability to disseminate infections. Vaginal douches were given in five cases. Sulpharsenol injections were given to eight patients. These were women who had severe anæmia and were likely to benefit from small doses of easily absorbed arsenical preparations. Icthyol Tampons were given in 11 cases to women who, when otherwise fit for dismissal, were found to have organisms still culturable from the cervical swab.

*Operative Procedures.*—Thirty patients required minor operations, such as incision and drainage of mammary abscess, or of abscesses elsewhere. Laparotomy was performed in ten cases of General Peritonitis, and in two other cases major abdominal operations were required. Apart from these patients, there were eight for whom the visiting surgeon was called in consultation.

*Veneral Disease.*—Twenty-four beds for male patients are available in this department. Dr. Ballingall, the Resident Medical Officer during the year, has furnished the following summary of the work.

During the year, 229 patients were treated and discharged. This figure is practically the same as in 1928. Two deaths occurred, these being in elderly debilitated patients, and the causes were gonococcal septicæmia and septicæmia due to phagedænic



ulceration. The available beds were fully occupied throughout the year, except during a short period when the ward was being painted. The cases were classified as follows:—

Syphilis, ... ..	47
Gonorrhœa, ... ..	145
Soft Chancre, ... ..	20
Balanitis, ... ..	7
Venereal Warts, ... ..	5
Syphilis and Gonorrhœa, ... ..	4
Syphilis and Soft Chancre, ... ..	1
Total, ... ..	<u>229</u>

The syphilitic cases represented all stages of the disease, and were as follows;—

Primary, ... ..	9
Secondary, ... ..	14
Tertiary, ... ..	16
Neuro-syphilis, ... ..	8
Total, ... ..	<u>47</u>

The age incidence among all patients was as follows:—

15 and under 25, ... ..	59
25 „ 35, ... ..	87
35 „ 45, ... ..	43
45 and over, ... ..	40
Total, ... ..	<u>229</u>

The majority of the cases of gonorrhœa were admitted on account of the existence of some complication. Epididymitis accounted for 79 out of 145, *i.e.*, 54·5 per cent. This figure is greatly in excess of the average of about 20 per cent., and is accounted for by the fact that every possible effort was made to get patients suffering from epididymitis to come for hospital treatment. The remaining gonorrhœal patients exhibited one or other of the following complications or extensions—Prostatitis, Arthritis, Cowperitis, Peri-urethral Abscess, and Posterior Urethritis.

As a general rule these complications are not suitable for out-patient treatment.

Careful enquiry was made into the cause of all cases of epididymitis, and various new methods of treatment were pursued. In many cases the cause seemed to rest with the patient himself through neglect of treatment, indulgence in alcohol, and strenuous exercise.

Formerly, the usual treatment pursued was rest in bed, with local application to the affected part, but within the past few years intravenous therapy has been advocated. Various drugs were used in series of cases and the results compared.

Calcium chloride, sodium iodide, magnesium sulphate, acriflavine and hypertonic saline were used intravenously. Vaccines and protein shock were also employed. The most favourable results were obtained

with calcium chloride, there being a marked improvement within twenty-four hours of the administration of the drug. In the majority of cases four to six daily injections were sufficient. Sodium iodide produced quite satisfactory results, but not so good as calcium chloride. The effects of acriflavine and hypertonic saline were disappointing. Magnesium sulphate, while of value, produced toxic symptoms, and was discarded on that account.

Six cases of complications resulting directly from anti-syphilitic treatment were dealt with during the year. Five were admitted from treatment centres, and the other occurred during the course of treatment in hospital. These cases may be grouped as follows:—

				Number of Days in Hospital.		
Dermatitis (3),	...	...	...	80	29	40
Jaundice (1),	...	...	...		21	
Dermatitis and Stomatitis (1),			...		8	
Dermatitis and Jaundice (1),			...		96	

Of these cases, four were relatively mild and the condition cleared up quickly under treatment with "Ametox", a proprietary preparation of thiosulphate. The remaining two were cases of severe arsenical dermatitis, with marked constitutional and febrile disturbances. All the cases made a complete recovery from their complications.

The average daily residence of all patients was 33 days.

THOMAS ARCHIBALD,  
*Physician-Superintendent.*

1st April, 1930.

# BELVIDERE HOSPITAL—STATEMENT OF CASES TREATED ACCORDING TO SEX. DATA BASED ON DISMISSALS AND DEATHS FOR YEAR 1929.

Disease.	In Hospital 1st Jan., 1929.		Admitted.		Dismissed.		Died.		Remaining in Hospital, 31st Dec., 1929.		Mortality per cent.		Average Days Residence.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Typhus,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paratyphoid Fever (B),	3	1	9	15	9	12	1	2	2	2	10-0	14-3	66	50	2	22
Continued and Undefined Fever,	...	...	5	20	4	19	1	1	...	1	20-0	5-0	38	41	15	24
Puerperal Fever,	...	...	...	346	...	276	...	63	...	36	...	18-6	...	41	...	13
Smallpox,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever,	87	114	646	790	631	787	5	6	97	111	0-8	0-8	46	46	15	18
Diphtheria and Mem. Croup,	55	69	388	499	358	465	29	29	56	74	7-5	5-9	40	43	5	7
Erysipelas,	...	...	1	3	1	3	...	...	...	...	...	...	4	22	...	...
Cholera,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Fever,	1	2	52	28	11	5	40	24	2	1	78-4	82-8	58	56	14	29
Ophthalmia Neonatorum,	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...
Trachoma,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Poliioencephalitis,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Poliomyelitis,	...	...	3	...	2	...	...	...	1	...	...	...	29	...	...	...
Acute Primary Pneumonia,	115	69	811	516	669	434	206	112	51	39	23-5	20-5	36	37	10	13
Acute Influenzal-Pneumonia,	4	3	74	74	55	60	22	14	1	3	28-6	18-9	33	34	8	9
Malaria,	...	...	2	...	2	...	...	...	...	...	...	...	4	...	...	...
Dysentery,	...	...	2	13	12	14	...	...	3	2	...	...	20	24	...	...
Relapsing Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis,	...	...	2	6	1	1	2	5	...	...	66-7	83-3	65	25	70	4
Other forms of Tuberculosis,	...	...	22	20	1	3	21	15	...	2	95-5	83-3	123	88	7	10
Measles,	...	...	92	79	54	49	7	8	31	22	11-5	14-0	31	35	11	10
German Measles,	...	...	2	25	26	29	...	...	...	...	...	...	13	10	...	...
Whooping Cough,	17	22	126	126	95	100	36	40	12	8	27-5	28-6	51	57	15	15
Chickenpox,	...	...	10	115	117	96	...	...	8	6	...	...	36	38	...	...
Mumps,	...	...	...	4	1	4	...	...	...	...	...	...	10	12	...	...
Veneral Diseases,	...	...	228	...	227	...	2	...	19	...	0-9	...	...	...	69	...
Babies with Mothers,	...	...	9	9	6	9	...	...	3	...	...	...	...	24	41	...
No apparent Disease,	...	...	5	4	5	4	...	...	...	...	...	...	...	19	16	...
Others,	...	...	10	14	169	172	24	30	13	9	12-4	14-8	26	25	15	8
Totals,	327	338	2,825	2,869	2,457	2,542	396	349	299	316	13-9	12-1	38	41	11	12

IDERE HOSPITAL.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF  
CASES DISMISSED, AND DEATHS DURING THE YEAR 1929.

Age.	Enteric Fever.	Paratyphoid Fever.	Puerperal Fever.	Scarlet Fever.	Diph. and Mem. Group.	Erysipelas.	Cerebro-spinal Fever.	Ophthalmia Neonatorum.	Polomyelitis.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Malaria.	Dysentery.	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Measles.	German Measles.	Whooping Cough.	Chickenpox.	Mumps.	Veneral Diseases.	Babies with Mothers.	No apparent Disease.	Others.	Total
(including Deaths).																									
1	-	-	-	3	11	-	11	1	-	134	5	-	-	-	2	4	-	36	10	-	-	6	1	34	258
2	-	-	-	12	38	-	4	-	-	154	7	-	1	-	4	13	-	38	14	-	-	-	-	21	306
3	-	-	-	44	29	-	3	-	-	82	2	-	1	1	2	17	1	16	18	-	-	-	-	13	229
4	-	-	-	43	38	-	1	-	-	48	5	-	-	-	2	10	2	19	17	-	-	-	-	11	197
5	1	-	-	51	42	-	1	-	-	37	-	-	2	-	3	5	-	8	10	-	-	-	1	9	170
10	2	-	-	293	140	-	5	-	-	119	4	-	6	-	3	12	13	14	34	-	-	-	1	21	667
15	-	-	-	101	50	-	7	-	1	55	1	-	1	-	1	-	3	-	3	1	-	-	1	12	237
25	2	3	-	66	24	-	15	-	1	73	15	-	-	1	5	-	4	-	8	-	59	-	1	26	303
35	4	1	-	12	10	-	2	-	-	47	8	1	-	-	-	-	3	-	3	-	87	-	-	24	202
45	1	-	-	8	4	-	1	-	-	45	14	-	-	-	-	-	-	-	-	-	43	-	-	6	122
+	-	1	-	3	1	1	1	-	-	81	16	1	-	1	-	-	-	-	-	-	40	-	-	16	162
...	10	5	-	636	387	1	51	1	2	875	77	2	12	3	22	61	26	131	117	1	229	6	5	193	2,853
1	-	-	-	1	16	-	8	-	-	86	2	-	1	1	1	6	-	39	8	-	-	9	1	24	203
2	-	-	-	10	27	-	6	-	-	114	13	-	1	1	1	17	1	41	16	-	-	-	-	14	262
3	-	-	-	25	36	-	2	-	-	77	4	-	-	-	2	5	1	20	12	-	-	-	1	7	192
4	-	-	-	52	39	-	3	-	-	35	1	-	1	-	1	13	1	12	18	-	-	-	1	7	184
5	3	-	-	52	36	-	1	-	-	21	1	-	-	-	2	4	1	12	5	-	-	-	-	10	148
10	3	1	-	361	186	-	5	-	-	79	6	-	5	1	4	12	18	15	29	1	-	-	1	26	753
15	1	-	1	133	71	-	1	-	-	22	2	-	2	-	2	-	1	1	3	-	-	-	-	11	251
25	2	12	97	110	55	-	3	-	-	31	8	-	2	2	4	-	4	-	5	3	-	-	-	41	379
35	2	2	183	36	18	-	-	-	-	20	18	-	1	1	1	-	2	-	-	-	-	-	-	31	315
45	1	2	56	10	8	2	-	-	-	19	10	-	1	-	-	-	-	-	-	-	-	-	-	17	126
+	2	3	2	3	2	1	-	-	-	42	9	-	-	-	-	-	-	-	-	-	-	-	-	14	78
...	14	20	339	793	494	3	29	-	-	546	74	-	14	6	18	57	29	140	96	4	-	9	4	202	2,891
1	-	-	-	-	2	-	11	-	-	64	2	-	-	-	2	-	-	16	-	-	-	-	-	10	107
2	-	-	-	-	9	-	3	-	-	40	1	-	-	-	4	3	-	13	-	-	-	-	-	1	74
3	-	-	-	2	1	-	1	-	-	9	-	-	-	1	2	2	-	4	-	-	-	-	-	1	23
4	-	-	-	-	5	-	1	-	-	9	-	-	-	-	2	1	-	1	-	-	-	-	-	2	21
5	-	-	-	2	4	-	1	-	-	3	-	-	-	-	2	1	-	-	-	-	-	-	-	1	14
10	-	-	-	1	6	-	5	-	-	3	1	-	-	-	3	-	-	2	-	-	-	-	-	1	22
15	-	-	-	-	1	-	4	-	-	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	10
25	-	1	-	-	-	-	11	-	-	4	2	-	-	-	5	-	-	-	-	-	-	-	-	1	24
35	1	-	-	-	-	-	2	-	-	6	2	-	-	-	-	-	-	-	-	-	-	-	-	1	12
45	-	-	-	-	1	-	1	-	-	17	6	-	-	-	-	-	-	-	-	-	-	-	-	3	28
+	-	-	-	-	-	-	-	-	-	47	8	-	-	1	-	-	-	-	-	-	2	-	-	3	61
...	1	1	-	5	29	-	40	-	-	206	22	-	-	2	21	7	-	36	-	-	2	-	-	24	396
1	-	-	-	-	4	-	8	-	-	34	1	-	-	1	1	3	-	21	-	-	-	-	-	8	81
2	-	-	-	-	4	-	6	-	-	30	2	-	-	1	1	5	-	14	-	-	-	-	-	3	66
3	-	-	-	-	4	-	2	-	-	13	1	-	-	-	2	-	-	2	-	-	-	-	-	2	26
4	-	-	-	-	3	-	2	-	-	3	-	-	-	-	1	-	-	1	-	-	-	-	-	1	11
5	-	-	-	1	3	-	1	-	-	1	1	-	-	-	2	-	-	-	-	-	-	-	-	1	10
10	-	-	-	3	11	-	2	-	-	4	-	-	-	1	4	-	-	2	-	-	-	-	-	2	29
15	-	-	-	1	-	-	1	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	1	6
25	-	1	17	1	-	-	2	-	-	2	1	-	-	1	2	-	-	-	-	-	-	-	-	2	29
35	1	-	29	-	-	-	-	-	-	1	3	-	-	1	-	-	-	-	-	-	-	-	-	-	35
45	-	-	15	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	3	25
+	1	-	2	-	-	-	-	-	-	16	5	-	-	-	-	-	-	-	-	-	-	-	-	7	31
...	2	1	63	6	29	-	24	-	-	112	14	-	-	5	15	8	-	40	-	-	-	-	-	30	349

# BELVIDERE HOSPITAL—TABLE SHOWING ALTERATIONS IN DIAGNOSIS OF CASES DISMISSED AND DEATHS DURING 1929.

Diagnosis altered to	ORIGINALLY CERTIFIED AS																
	Typhus Fever.	Enteric Fever.	Continued and Undefined Fever.	Puerperal Fever.	Scarlet Fever.	Scarlet Fever and Other Diseases.	Diphtheria.	Diphtheria and Other Diseases.	Cerebro-spinal Fever.	Poliomyelitis.	Pneumonia and Other Diseases.	Pneumonia.	Dysentery.	Measles.	Measles and Other Diseases.	German Measles.	Whooping-Cough.
Typhus Fever, ... ..	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Enteric Fever, ... ..	-	-	1	-	-	-	1	-	1	1	-	1	-	-	-	-	-
Continued and Undefined Fever, ... ..	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerperal Fever and Other Diseases, ... ..	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Scarlet Fever, ... ..	-	1	1	-	-	4	9	-	1	-	3	-	2	-	-	1	-
Scarlet Fever and Other Diseases, ... ..	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria, ... ..	-	-	-	-	3	-	-	4	-	-	3	-	-	-	-	-	-
Diphtheria and Other Diseases, ... ..	-	-	-	-	-	-	15	-	-	-	1	-	-	-	-	-	-
Cerebro-spinal Fever, ... ..	-	-	-	-	-	-	-	-	-	1	15	-	-	-	-	-	-
Dysentery, ... ..	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poliomyelitis, ... ..	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Pneumonia, ... ..	-	8	2	2	9	11	1	19	-	5	-	-	-	-	-	1	2
Pneumonia and Other Diseases, ... ..	-	-	-	-	-	-	-	1	-	5	-	-	-	-	-	-	-
Erysipelas, ... ..	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Tuberculosis (all forms), ... ..	-	5	1	1	-	1	25	-	-	12	-	-	-	-	-	-	1
Measles, ... ..	-	-	-	-	7	3	1	-	-	13	-	-	-	-	-	-	-
Measles and Other Diseases, ... ..	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Roseola, ... ..	-	-	-	-	39	-	-	-	-	-	-	-	-	-	-	-	-
Whooping-Cough, ... ..	-	-	-	-	-	1	-	-	-	1	24	3	-	-	-	-	1
Mumps, ... ..	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Chickenpox, ... ..	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
Chickenpox and Other Diseases, ... ..	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Influenza, ... ..	-	5	1	-	4	1	3	-	10	-	-	-	-	-	-	-	-
Other Diseases of the Nervous System, ... ..	-	1	-	-	1	2	8	1	1	-	-	-	-	-	-	-	-
Other Diseases of the Respiratory System, ... ..	-	2	1	-	6	14	3	-	65	2	-	-	-	-	-	1	1
Diseases of the Circulatory System, ... ..	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-
Diseases of the Digestive System, ... ..	-	8	1	1	34	60	1	8	-	26	3	-	-	-	-	1	-
Other Accidents and Diseases of Pregnancy and Parturition, ... ..	-	-	-	23	1	-	-	-	-	2	-	-	-	-	-	-	-
Diseases of the Skin and of the Cellular Tissue, ... ..	-	-	-	-	7	1	1	-	1	-	1	-	-	-	-	-	4
No apparent Disease, ... ..	-	-	-	-	2	1	3	-	2	1	-	-	-	-	-	-	-
All other Diseases, ... ..	-	4	3	6	12	-	4	-	4	-	13	-	-	-	-	-	5



RUCHILL FEVER AND TUBERCULOSIS HOSPITAL.

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The total number of patients treated in Hospital during the year ending December 31st, 1929, was 4,828, compared with 5,118 for the preceding year, a fall of 290. This is accounted for by a reduction in the number of cases of diphtheria and measles also to a certain extent of whooping-cough. The general mortality rate shows a marked increase, being 12·2 per cent. as compared with 10·6 per cent. in 1928, due to the incidence of pneumonia and influenza during the first two months of the year.

The number of enteric fever cases treated to a conclusion by the end of the year was eight, the same as last year. The cases of paratyphoid infection continued few in number.

Scarlet fever patients were slightly in excess of last year (946 as compared with 926). The mortality rate shows a slight fall. The cases were generally of a mild type, though a fair proportion of septic cases were met with. Scarlatinal anti-toxin was again extensively used with considerable benefit. Specially striking was the result in one particular case which was admitted in a state of coma and to all appearances practically moribund. A dose of the anti-toxin was given and followed by a slight improvement in the general condition. The serum was repeated the following day with marked benefit and, though the progress was somewhat slow, the patient eventually made a perfect recovery.

The cases of diphtheria showed a very striking falling-off in numbers, only 658 being treated, whereas last year the number was 988.

This difference is accounted for by a lessened incidence of the disease as compared with that of the previous year, which was unusually heavy. Also there were fewer patients admitted on account of the presence of a positive swab with no actual lesion. This latter factor accounts also to some extent for the increased mortality rate which was five per cent. compared with 4·1 per cent. last year.

In erysipelas there was a further increase in the number of patients treated, 580 being dealt with as compared with 485 last year. The mortality rate was increased from 7·5 per cent. to 8·8 per cent.

Cerebro-spinal fever patients numbered 72 compared with 26 last year. This increase corresponded to an increased incidence of the disease in the City, which might be described as a mild epidemic. The results of treatment were somewhat more satisfactory than before, a circumstance which is usually noticed when the cases dealt with occur during an epidemic and are not all of the sporadic variety. The type of case encountered might be described as the ordinary acute form with well-marked meningeal symptoms; but very few exhibited any sign of rash, either hæmorrhagic or erythematous. Among the patients who recovered, the only sequela noted was hydrocephalus, which developed in a few cases.

Encephalitis lethargica was again practically non-existent; but in this connection an interesting series of cases was met with in which the patients presented an appearance very like the early stages of this disease. They were admitted in a very drowsy condition with a history of severe headache and often vomiting and delirium of sudden onset. On examination, no very definite signs of organic disease of the nervous system were discoverable. The cerebro-spinal fluid was often under increased pressure but was usually normal in other respects, though in a few instances there was an increase in the protein content. The striking feature about these cases was the strong odour of acetone which pervaded the atmosphere in the vicinity of the patient and the presence of this substance in large amount in the urine. In many of the cases there was a well-marked enteritis with green stools and diarrhoea and in others there was constipation. They thus appeared to be cases of acidosis associated with intestinal toxæmia. The majority of them cleared up within a few days and did not exhibit any further symptoms.

Cases of poliomyelitis were fewer and did not present any special features.

During the first two months of the year an epidemic of pneumonia associated with influenza occurred in the City and caused a considerable increase in the total cases of primary and influenzal pneumonia treated in Hospital, the former being more numerous by 285 and the latter by 93. The total of these cases combined was 1,414, or nearly 30 per cent. of the total admissions, and consequently the resources of the Hospital were taxed to their utmost. The effect of the presence of influenza in the early part of the year was very definitely reflected in the cases of pneumonia met with during the same period. In the first place, it had an influence upon the incidence of the disease, for the curve of pneumonia cases was practically identical with that of influenza, though lagging a few days behind them, strongly suggesting an increased susceptibility on the part of influenza patients to contract pneumonia. Other points of interest noted in the cases of pneumonia occurring during the influenza period were an increased incidence of broncho-pneumonia, especially among older patients, an increase in the mortality of broncho-pneumonia particularly, and the occurrence of many anomalous types of pneumonia.

Dysentery cases were increased though not numerous, totalling 21 as compared with 12 for the previous year. They were mostly in young children and were of the bacillary type. The majority were of a mild degree, and with one exception all made good recoveries.

Non-pulmonary tuberculosis cases dealt with on the Fever side of the Hospital showed, as usual, a very high mortality rate, which is due to the fact that they consist almost entirely of cases of tuberculous meningitis which have been sent into Hospital as cerebro-spinal fever or encephalitis lethargica.

Another striking reduction in numbers is seen in the measles cases, there being fewer by 439 than in the previous year. This is

due to the absence of the disease in the City in epidemic form during the greater part of the year. Towards the end of the year, however, the disease had commenced, and as can be seen from the figures, there were over 90 cases in Hospital. As the result of the presence of a measles epidemic crossing of wards with this disease was common and the use of convalescent patients' serum as a protective measure for susceptible contacts was employed as before. The results were on the whole, satisfactory, though complete protection was not obtained with the same success as formerly. The following accounts of the experience in a few instances will serve to indicate the general results:—

A female pneumonia ward was crossed and there were 18 susceptible children in the ward, all of whom were given three cc's of convalescent serum within 48 hours of exposure. Only two of these inoculated patients developed measles, one 13 days and the other 17 days after exposure. In both instances the disease was very modified in severity. A male diphtheria ward was crossed and each of the four susceptible patients was given five cc's of serum within 24 hours of exposure. Three of them developed measles 14 days later, but in each case the disease occurred in a very mild form.

Another female pneumonia ward was crossed which contained 16 susceptible children, and these were all given two cc's of serum four days after exposure. Eight of them developed measles but as in the instances before mentioned the attacks were of a very mild nature.

The experience in another pneumonia ward was of special interest.

A case of measles occurred and 12 susceptibles were inoculated with the serum. After the lapse of 15 days without another case occurring it was assumed that all had been fully protected and the ward was allowed out of quarantine and fresh cases of pneumonia were admitted. However, five days later, that is 20 days from the occurrence of the primary case, one of the children previously inoculated developed measles. Careful investigation failed to reveal any possible source of infection other than the original case and suggested the conclusion that the second case was an instance of abnormally long incubation, possibly a result of the inoculation.

The number of whooping-cough cases was considerably reduced but the mortality remained about the same.

The assistance of the Visiting Aural Surgeon was made use of in 369 instances consisting of 241 new patients and 128 old patients. The conditions dealt with included middle ear disease, both acute and chronic, enlarged tonsils and adenoids, mastoid disease, nasal polypus, septal disease, tuberculous pharyngitis, sinus disease and rhinitis. Operations to the number of 133 were performed, and of these 114 were for the removal of tonsils and adenoids, mainly for the treatment of persistent aural or nasal discharge, cervical adenitis and persistent positive cultures in cases of diphtheria. The other operation most frequently occurring was mastoidectomy which was performed in 14 cases.

Dr. I. McCracken, Tuberculosis Officer, presents the following account of the work in the Tuberculosis Section of the Hospital:—

“In the Tuberculosis Section of the Hospital during 1929, the dismissals and deaths together numbered 710 as compared with 543 in 1928. The increase affected the groups of intermediate and advanced cases only, and the increase in the number of deaths (206 as compared with 160) was confined to advanced cases. The proportion of deaths to total cases was 29 per cent. The average period of residence in Hospital was five months.

The type of case remains substantially the same as in previous years. It will be noted that among the reasons for dismissal, “Own or parents request” accounts for a considerable proportion of cases. Among advanced cases it happens not infrequently that the patient, who feels that he is not making progress, expresses a desire to go home and will not be persuaded to remain, however unsuitable the home conditions. On the other hand, the relatives or friends, having received an unfavourable prognosis often remove the patient. It is difficult to see how this can be avoided.

Again, in the intermediate group there are cases whose progress is slow and who become tired of remaining in Hospital. Others of the group improve up to a point, and then become stationary in a condition where their physiological reserve is very small. In the absence of suitable home conditions such cases can only be regarded as Hospital lives and it is commonly found that when they leave Hospital (at their own request or when there is urgent call for bed accommodation) their health deteriorates rapidly and this necessitates readmission to an institution after a short time. The few such cases who are content to remain in Hospital indefinitely constitute one of the minor problems of a Hospital for advanced cases.

*Complications.*—The most important tuberculous complications are as follows:—Tuberculous laryngitis, 45; tuberculous enteritis, 13; tuberculous peritonitis, 9; spontaneous pneumothorax, 5; pleural effusion, 5; bone and joint tuberculosis, 5; congenital tuberculosis, 5; tuberculous adenitis, 4; tuberculous meningitis, 3; tuberculous pharyngitis, 2; one case each of miliary tuberculosis and tuberculous mastoiditis.

Among non-tuberculous complications may be mentioned—Bronchitis, 9; nephritis, 4; and one case each of pneumococcal meningitis, carcinoma of colon, epithelioma of tongue, and hyperthyroidism.

*Treatment.*—No alteration has been made in methods of treatment and the special methods of artificial pneumothorax and gas replacement continue to be used. Lipiodol has been used in a few cases to aid diagnosis. Treatment by means of artificial helio-therapy has been carried out on cases of surgical tuberculosis in children—chiefly abdominal tuberculosis. On account of the installation of



the new X-ray plant and the increase in radiological work following this, the treatment has been much interrupted. Thirteen cases were treated, a total of 156 hours of irradiation with the mercury vapour lamp being given.

*Dental Treatment.*—Extractions of teeth where necessary have been carried out by the Medical Officers. Twenty-eight patients received dental treatment, the total number of extractions being 117.

*Non-Pulmonary Tuberculosis.*—Of the 27 cases, 17 were suffering from abdominal tuberculosis. Among these were four deaths. The remaining four deaths in this group were due to:—Meningitis, 2; polyorrhomenitis, 1; miliary tuberculosis, 1.

*Non-Tuberculous Cases.*—There were 26 in number as follows:—Asthma and bronchitis, 8; bronchiectasis and post-pneumonic conditions, 5; pulmonary and mediastinal neoplasm, 6; other conditions, 7.

Exercise and recreation in the form of walking in the grounds and bowling during the summer months were permitted to those who were fit and during the winter months through the kindness of friends concerts were provided for the entertainment of the patients."

Since the last report the new X-ray installation has been completed and was in commission sometime before the end of the year. It has been greatly appreciated and the work of the department has been considerably improved.

W. M. ELLIOTT,  
*Physician-Superintendent.*

8th April, 1930.



RUCHILL HOSPITAL.—STATEMENT OF CASES TREATED ACCORDING TO SEX.  
DATA BASED ON DISMISSALS AND DEATHS FOR YEAR, 1929.

Disease.	In Hosp. 1st Jan., 1929.		Admitted.		Dismissed.		Died.		Remaining in Hospital at 31st Jan., 1929.		Mortality per cent.		Ave. Residence (Days).	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Dismissals.	Deaths.
Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever, ...	—	—	13	—	—	—	2	—	5	—	25.0	—	84	10
Paratyphoid B., ...	—	1	2	—	6	—	—	—	—	—	—	—	109	48
Continued and Undefined Fever, ...	—	—	2	1	2	1	—	—	—	—	—	—	69	17
Puerperal Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever, ...	68	93	390	578	368	567	7	4	83	100	1.9	0.7	46	43
Diphtheria and Mem. Croup, ...	45	67	292	361	267	360	21	10	49	58	7.3	2.7	56	54
Erysipelas, ...	18	21	281	297	252	277	27	24	20	17	9.7	8.0	23	21
Cholera, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	7
Cerebro-spinal Fever, ...	1	3	43	33	10	8	29	25	5	3	74.4	75.8	112	144
Ophthalmia Neonatorum, ...	—	—	9	5	7	5	2	—	—	—	22.2	—	17	21
Trachoma, ...	4	5	10	11	14	16	—	—	—	—	—	—	49	83
Encephalitis Lethargica, ...	2	1	—	7	—	4	—	—	2	4	—	—	29	—
Acute Poliomyelitis, ...	—	—	—	1	—	—	—	—	—	1	—	—	—	—
Acute Poliomyelitis, ...	3	5	6	3	7	7	—	—	2	1	—	—	203	169
Acute Primary Pneumonia, ...	84	54	765	494	635	405	154	105	60	38	19.5	20.6	37	38
Acute Influenzal-Pneumonia, ...	4	—	68	45	51	35	19	10	2	—	27.1	22.2	33	35
Malaria, ...	—	—	1	—	1	—	—	—	—	—	—	—	126	5
Dysentery, ...	1	4	9	7	10	10	—	1	—	—	—	9.1	36	31
Relapsing Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis, ...	—	—	21	5	16	3	4	—	1	1	20.0	25.0	24	15
Other forms of Tuberculosis, ...	1	—	19	26	1	1	19	25	—	—	95.0	96.2	225	1
Measles, ...	—	3	136	147	79	94	10	7	47	49	11.2	6.9	24	25
German Measles, ...	—	5	10	38	72	43	81	1	—	—	1.2	1.9	17	—
Whooping-Cough, ...	16	16	80	108	65	87	15	30	16	7	18.8	25.6	63	63
Chickenpox, ...	—	—	—	3	2	4	—	—	—	—	—	—	35	43
Child with Mother, ...	1	—	4	5	2	4	1	1	1	—	33.3	20.0	27	21
Mother with Child, ...	—	—	—	8	—	8	—	—	—	—	—	—	18	—
No apparent Disease, ...	—	—	11	4	11	4	—	—	—	—	—	—	10	16
Others, ...	33	32	200	215	191	214	21	15	21	18	9.9	6.6	31	29
														25

RUCHILL HOSPITAL.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF  
CASES DISMISSED AND DEATHS DURING THE YEAR, 1929.

Age.	Enteric Fever.	Paratyphoid B.	Continued and Undefined Fever.	Scarlet Fever.	Diph. and Mem. Croup.	Erysipelas.	Cerebro-spinal Fever.	Ophthalmia Neonatorum.	Trachoma.	Etiophthalmia.	Acute Poliomyelitis.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Malaria.	Dysentery.	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Measles.	German Measles.	Whooping-Cough.	Chickenpox.	Child with Mother.	Mother with Child.	No apparent Disease.	Others.	Totals.	
s (including Deaths).																											
- 1	-	-	-	-	8	7	15	9	-	-	-	91	2	-	3	-	2	9	1	22	-	3	-	-	32	204	
- 2	-	-	-	18	21	2	4	-	-	-	2	107	6	-	2	1	4	20	4	19	3	-	-	1	23	237	
- 3	1	-	-	22	20	2	5	-	-	-	2	55	-	-	2	-	-	13	5	11	-	-	-	2	17	157	
- 4	-	-	-	27	42	-	4	-	-	-	1	36	1	-	-	-	3	18	4	9	-	-	-	-	9	154	
- 5	-	-	-	24	24	9	1	-	-	-	1	21	-	-	-	-	-	10	3	6	-	-	-	-	15	114	
-10	1	-	-	176	111	7	4	-	1	-	-	111	7	-	1	2	3	19	19	13	1	-	-	1	27	504	
-15	-	-	-	62	30	8	-	-	-	-	-	45	1	-	-	-	2	-	3	-	-	-	-	-	9	160	
-25	3	2	2	32	21	23	3	-	4	-	1	107	11	-	-	4	4	-	2	-	-	-	-	3	26	248	
-35	-	-	-	9	8	21	1	-	6	-	-	63	10	1	1	6	1	-	2	-	-	-	-	1	7	137	
-45	-	-	-	4	2	44	1	-	1	-	-	60	13	-	-	5	1	-	-	-	-	-	-	-	13	144	
15+	3	-	-	1	1	156	1	-	2	-	-	93	19	-	1	2	-	-	-	-	-	-	-	3	34	316	
total,	8	2	2	375	288	279	39	9	14	-	7	789	70	1	10	20	20	89	43	80	4	3	-	11	212	2,375	
- 1	-	-	-	-	1	9	8	7	5	-	-	66	2	-	4	-	3	10	2	34	1	4	-	-	24	180	
- 2	-	-	-	11	21	2	7	-	-	-	1	83	2	-	4	-	2	21	6	24	1	-	-	-	21	206	
- 3	-	-	-	21	22	3	2	-	-	-	4	53	4	-	2	-	-	16	6	15	-	-	-	1	22	171	
- 4	-	-	-	36	30	2	2	-	-	-	1	27	-	-	1	-	1	12	8	22	-	1	-	-	8	151	
- 5	-	-	-	41	34	1	1	-	-	-	-	26	-	-	-	-	3	3	4	12	-	-	-	-	6	131	
-10	-	-	-	219	127	9	1	-	3	1	1	73	2	-	-	1	4	25	18	9	-	-	-	2	29	524	
-15	-	-	-	103	45	8	5	-	3	1	-	34	3	-	-	-	3	1	7	-	-	-	-	-	17	230	
-25	-	1	-	91	49	42	4	-	7	1	-	50	8	-	-	1	9	10	24	1	-	-	6	1	40	345	
-35	-	-	1	32	21	47	2	-	1	-	-	34	8	-	-	1	-	2	7	-	-	-	2	-	22	180	
-45	-	-	-	10	9	48	2	-	1	1	-	24	8	-	-	1	1	1	-	-	-	-	-	-	10	116	
15+	-	-	-	6	3	131	-	-	1	-	-	40	8	-	-	-	-	-	-	-	-	-	-	-	30	219	
total,	-	1	1	571	370	301	33	5	16	4	7	510	45	-	11	4	26	101	82	117	2	5	8	4	229	2,453	
us.																											
- 1	-	-	-	-	2	1	11	2	-	-	-	23	1	-	-	-	2	2	-	6	-	1	-	-	5	56	
- 2	-	-	-	2	5	-	3	-	-	-	-	30	2	-	-	-	4	4	-	6	-	-	-	-	-	56	
- 3	1	-	-	1	3	-	3	-	-	-	-	8	-	-	-	-	-	1	-	1	-	-	-	-	-	18	
- 4	-	-	-	-	3	-	4	-	-	-	-	3	-	-	-	-	3	2	-	1	-	-	-	-	1	17	
- 5	-	-	-	-	2	-	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	5	
-10	-	-	-	3	5	-	3	-	-	-	-	5	1	-	-	-	2	-	-	1	-	-	-	-	-	20	
-15	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	4	
-25	-	-	-	-	-	-	2	-	-	-	-	7	3	-	-	2	4	-	-	-	-	-	-	-	2	20	
-35	-	-	-	-	1	1	-	-	-	-	-	13	1	-	-	-	1	-	-	-	-	-	-	2	19		
-45	-	-	-	-	2	1	-	-	-	-	-	17	3	-	-	1	1	-	-	-	-	-	-	-	1	26	
15+	1	-	-	-	-	23	1	-	-	-	-	46	8	-	-	1	-	-	-	-	-	-	-	-	10	90	
total,	2	-	-	7	21	27	29	2	-	-	-	154	19	-	-	4	19	10	-	15	-	1	-	-	21	331	
- 1	-	-	-	-	1	4	6	-	-	-	-	18	-	-	-	-	3	3	-	12	-	1	-	-	5	53	
- 2	-	-	-	-	1	-	6	-	-	-	-	21	-	-	1	-	1	3	1	10	-	-	-	-	-	44	
- 3	-	-	-	-	2	-	2	-	-	-	-	9	-	-	-	-	-	-	-	2	-	-	-	-	-	15	
- 4	-	-	-	-	1	-	2	-	-	-	-	4	-	-	-	-	1	1	-	5	-	-	-	-	-	14	
- 5	-	-	-	-	1	-	1	-	-	-	-	2	-	-	-	-	3	-	-	-	-	-	-	-	-	7	
-10	-	-	-	4	4	-	-	-	-	-	-	3	-	-	-	1	4	-	-	1	-	-	-	-	-	17	
-15	-	-	-	-	-	-	3	-	-	-	-	4	1	-	-	-	3	-	-	-	-	-	-	-	-	11	
-25	-	-	-	-	-	-	2	-	-	-	-	5	1	-	-	-	9	-	-	-	-	-	-	-	-	17	
-35	-	-	-	-	-	3	2	-	-	-	-	13	1	-	-	-	-	-	-	-	-	-	-	-	3	22	
-45	-	-	-	-	1	1	-	-	-	-	-	7	4	-	-	-	1	-	-	-	-	-	-	-	1	15	
15+	-	-	-	-	-	16	-	-	-	-	-	19	3	-	-	-	-	-	-	-	-	-	-	-	6	44	
total,	-	-	-	4	10	24	25	-	-	-	-	105	10	-	1	1	25	7	1	30	-	1	-	-	15	259	

# RUCHILL HOSPITAL.—TABLE SHOWING ALTERATIONS IN DIAGNOSIS OF CASES DISMISSED AND DEATHS DURING 1929.

ORIGINALLY CERTIFIED AS

Diagnosis Altered to.	Enteric Fever.	Continued and Undefined Fever.	Scarlet Fever.	Scarlet Fever and other Diseases.	Diphtheria.	Diphtheria and other Diseases.	Erysipelas.	Cerebro-spinal Fever.	Encephalitis Lethargica.	Acute Primary Pneumonia.	Pneumonia and other Diseases.	Acute Influenzal Pneumonia.	Dysentery.	Measles.	Measles and other Diseases.	Roseola.	Whooping-Cough.	Whooping-Cough and other Diseases.	Other Affections.	Paratyphoid.	German Measles.
Enteric Fever, ...	...	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid Fever, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerperal Fever, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scarlet Fever, ...	...	-	2	-	3	10	-	-	-	3	-	-	-	2	-	-	1	-	-	-	1
Diphtheria, ...	...	-	-	2	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Cerebro-spinal Fever, ...	...	-	1	-	1	-	-	-	-	8	-	-	-	1	-	-	-	-	-	-	-
Encephalitis Lethargica, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acute Primary Pneumonia, ...	...	1	4	4	-	9	-	11	2	-	1	-	-	-	-	-	3	-	-	-	-
Tuberculosis (all forms), ...	...	2	3	-	-	-	-	35	5	23	-	1	-	-	-	-	-	-	-	-	-
Measles, ...	...	-	1	5	-	2	-	1	-	3	-	-	-	-	4	-	-	-	-	-	-
Roseola, ...	...	-	-	39	-	-	-	-	-	1	-	-	-	20	-	-	-	-	-	-	-
Whooping-Cough, ...	...	-	-	2	-	2	-	-	-	16	-	-	-	1	-	-	-	1	-	-	-
Chickenpox, ...	...	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Influenza and associated with other Diseases, ...	...	-	-	1	-	-	-	2	-	11	-	7	-	-	-	-	-	-	-	-	-
Other Diseases of the Nervous System, ...	...	2	-	-	-	1	-	1	8	4	-	-	-	-	-	-	-	-	-	-	-
Other Diseases of the Respiratory System, ...	...	1	-	2	-	4	-	-	1	118	-	10	-	-	-	-	-	-	-	-	-
Diseases of the Circulatory System, ...	...	-	-	-	1	-	-	3	-	1	-	1	-	-	-	-	-	-	-	-	-
Diseases of the Digestive System, ...	...	-	-	14	2	31	-	3	10	2	40	-	-	3	1	-	-	-	-	-	-
Diseases of the Skin and of the Cellular Tissue, ...	...	-	-	29	-	-	-	27	-	-	4	-	-	-	-	-	-	-	-	-	-
No apparent Disease, ...	...	-	-	1	-	3	-	4	-	4	-	2	-	1	-	-	-	-	-	-	-
All other Diseases, ...	...	2	3	10	-	4	-	16	6	3	16	-	3	-	1	-	-	-	-	-	-
Erysipelas, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polomyelitis, ...	...	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Dysentery, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid B., ...	...	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria and other Diseases, ...	...	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pneumonia and other Diseases, ...	...	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-
Scarlet Fever and other Diseases, ...	...	-	1	9	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
German Measles and other Diseases, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-
Whooping-Cough and other Diseases, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Measles and other Diseases, ...	...	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-



RUCHILL HOSPITAL—PULMONARY TUBERCULOSIS.—SHOWING STAGE OF DISEASE, AGE, RESULT OF TREATMENT, &c.,  
OF PATIENTS DISMISSED DURING 1929.

[illegible]



## KNIGHTSWOOD FEVER AND TUBERCULOSIS HOSPITAL.

The number of patients dismissed, including those who died during the year 1929 was 1597, as against 1681 for the previous year. All the wards were used for the treatment of fevers except two pavilions accommodating 80 patients with advanced phthisis.

The number of fever patients discharged from Hospital was 1171 while 189 died, making a total of 1360 patients. The mortality rate was 13·8 per cent. as against 11·2 for the previous year. This heavier mortality was due to the fact that close on half of the total number of cases dismissed, including deaths, were cases of acute primary pneumonia, the mortality among which was 21·8 per cent. The mortality was greatest during the very severe epidemic of influenza which was present in the city during the months of January and February.

*Scarlet Fever.*—A much smaller number of patients was treated, 261 as against 360 for the previous year. The type of case was rather more severe in character, the mortality rate being 2·2 per cent. as against ·5 per cent. in the preceding year. Six deaths occurred among 261 patients treated and the cause of death in each of these six cases is shown in the following table:—

*Causes of Death.*

Number of Deaths.	Pericarditis and Endocarditis.	Purpura Fulminans.	Lobar Pneumonia.	Pyæmia.	Tubercular Meningitis.	Pleurisy and Peritonitis.	No. of Patients.	Case Mortality per cent.
6	1	1	1	1	1	1	270	2·2

It will be observed from the above table that the cause of death in one case was Tubercular Meningitis, which was not a complication of scarlet Fever.

The new concentrated anti-toxin for scarlet fever was only administered to 19 acutely ill patients, as the type of case admitted to this Hospital was usually not very severe and the majority of the patients recovered quite well without the administration of the anti-toxin. It is difficult to assess the value of the anti-toxin unless it is administered to a large number of very severe or toxic cases. Out of the six cases in which death occurred there was only one case which was really suitable for the administration of the anti-toxin. In this case the serum was given and it was noted that pure cultures of hæmolytic streptococci were obtained *post-mortem* from the heart's blood and from the pleura and the peritoneum. Toxins were made from these streptococci and are now being used for intradermal tests in order to compare the results obtained with those from the Dick toxin. The anti-toxin appeared to be of some use, as formerly, in producing passive immunity among the Dick positives in other wards which had been crossed with scarlet fever.

The Dick test was performed chiefly on scarlet fever patients on 1,500 different occasions throughout the year in order to prove the value of this reaction. The results obtained as formerly did not agree with the accepted reactions and it was consequently very difficult here also to assess the true value of this test. Twenty-one of the junior nursing staff were subjected to the Dick test, but there were only two positive reactors, both of whom were actively immunised. The experience gained with the Dick test among the probationer nurses during the past three years seemed to prove that a nurse who gave a negative reaction was not at all likely to develop scarlet fever, and could be sent with safety to nurse the patients in scarlet fever wards. Very many toxins were prepared from hæmolytic streptococci obtained from the throats of scarlet fever patients at different stages of the disease and the intradermal reactions of these toxins are now being compared with those of the Dick toxin.

Three successive cultures were taken from the throats of all convalescent scarlet fever patients shortly before dismissal in order to prove the presence or absence of the hæmolytic streptococcus. Most of the cultures from these throats were found negative for this particular organism, but in those cases in which the cultures from the throat were found positive on dismissal an attempt was made to discover if any return cases resulted from these patients.

The Schultz-Charlton reaction was not found of much value as a negative result was so often obtained when the rash was well marked, and in doubtful cases where the rash was scanty and a positive reaction would be of value, blanching was practically never observed.

The aurist visited weekly all patients suffering from otitis media and it was found necessary to remove the tonsils and adenoids of five of these patients in order to hasten the drying up of the discharge.

*Diphtheria.*—The number of patients discharged from hospital was 201, and 12 died, making a total of 213 patients. The cases were of a severe type, the mortality being 5·6 per cent. as against only 1·5 per cent. in the previous year.

Two deaths were due to scarlet fever complicated with pyæmia.

The aurist enucleated the tonsils and removed the adenoids of 20 patients who were found to be carriers, and in a very short time after the operation these patients were able to be dismissed.

The Schick test was performed on 16 nurses, six of whom were found to give a positive reaction and were later immunised with toxoid anti-toxin mixture. This was of great value in administration, as all the negative reactors could be safely sent to act as nurses in diphtheria wards.

*Pneumonia.*—The number of patients treated totalled 545. The mortality rate for the whole group was 22·6 per cent., which was much greater than in the previous year when the mortality

was only 15.4 per cent. The death rate for the cases of broncho-pneumonia was 25.1 per cent. and in the cases of pneumonia occurring in adults the death rate was 19.1 per cent.

A great many patients are admitted every year certified as suffering from pneumonia, but are found after admission to be suffering from some other chest condition. An attempt was therefore made to classify the cases admitted during the first five weeks of the present year when the influenza epidemic was very prevalent. During this period 192 patients were admitted, of whom 119 were children under five years of age and 73 were adults and elderly persons. Details of the cases under five years are classified according to diagnosis made after admission together with number of cases, complications and deaths, in the following table:—

Disease found present on admission.	Number of Cases.	Complications.			Number of Deaths.	Case Mortality per cent.
		Empyema.	Otitis Media.	Enteritis.		
Broncho-Pneumonia,	104	1	7	10	32	30.8
Bronchitis, ...	15	—	—	—	—	—
Total, ...	119	1	7	10	32	26.9

It will be observed from the above table that out of 119 cases admitted only 15 were diagnosed as cases of bronchitis. This was entirely different from the experience of recent years when a very much larger proportion of the admissions were found to be merely suffering from bronchitis. The illness was a very acute one affecting well-nourished children. There were very few complications, and the death-rate was very high. Out of the 73 cases of pneumonia in adults admitted only 28 were diagnosed as cases of lobar pneumonia, the remainder being cases of various other chest conditions. There were no acute and rapidly fatal pneumonias, probably due to a streptococcal infection in this series of cases. The cases of pneumonia in adults were too few to draw any definite conclusions.

An attempt is now being made to type the various forms of pneumonia in adults admitted, use being made of agglutinating sera for three different types recently obtained.

*Bacillary Dysentery.*—During the months of August, September and October, 36 cases of this disease were admitted. The majority of the cases occurred in the south side of the City, many of them coming from the same street, and in one instance 16 cases were removed from the same tenement. The most frequent age group was between one and six years. Of the 36 cases, bacteriological examination of the faeces gave a positive result for the presence of *B. dysenteriae* (Flexener) in 24 instances, leaving 12 which were consistently negative. While the patients were under treatment two fresh cases of dysentery occurred in the hospital, one in a nurse who was in attendance on the cases, the other in a patient who was in an

adjoining ward. The disease therefore appeared to be very infectious. The symptoms in the majority of the cases were mild and in none of the cases did any complications develop.

*Measles.*—The number of cases treated was only 117. The fatality rate—10·2 per cent.—was low and was due to pneumonia alone or combined with enteritis.

*Whooping Cough.*—The number of patients discharged from Hospital was 64 and 18 died, making a total of 82 patients. The majority of the deaths were due to pneumonia alone or combined with convulsions.

*Pulmonary Tuberculosis.*—During the past year 181 phthisis cases were discharged from Hospital and 56 died, making a total of 237 patients. The hospital was mainly used for the treatment and isolation of the more advanced types of cases. As an illustration of this, no less than 75 per cent. of these cases were in an advanced stage of the disease on admission to hospital. The following table shows the medical classification into which these patients were grouped when admitted:—

Stage of Disease.				Number of Cases.	Number of Deaths in each Group.
Early,	...	...	...	2	—
Intermediate,	...	...	...	58	—
Advanced,	...	...	...	121	56
Total,				181	56

Details of each of these groups are shown in the appended table, the salient points of which may be summarised as follows:—

Stage of Disease.			Arrested	Much improved.	Improved.	Not improved.	Died.	Total.
Early Cases,	...	...	—	2	—	—	—	2
Intermediate Cases,	...	...	—	6	39	10	—	55
Advanced Cases,	...	...	—	9	80	27	32	148
Total,			—	17	119	37	32	205

NOTE.—The above table excludes eight patients whose duration of stay was less than four weeks, and 24 patients who died within a month of admission.

Apart from careful nursing and attention to the general health, no special form of treatment was adopted, as the majority were in a very advanced stage of the disease. The health of the hospital staff has been good, no illness of a very serious nature having occurred.

WILLIAM DOW.

Physician-Superintendent.

March, 1930.

## DATA BASED ON DISMISSALS AND DEATHS FOR YEAR 1929.

Disease.	In Hosp. 1st Jan., 1929.		Admitted.		Dismissed.		Died.		Remaining in Hospital 31st Dec., 1929.		Mortality per cent.		Av. Residence (days).		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paratyphoid B., ...	—	—	2	4	1	4	1	—	—	—	50.0	—	22	54	18	—
Continued Fever, ...	—	—	—	5	—	5	—	—	—	—	—	—	—	58	—	—
Puerperal Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	42	—	—
Smallpox, ...	—	—	—	2	—	2	—	—	—	—	—	—	—	20	—	—
Scarlet Fever, ...	11	14	125	178	111	144	1	5	24	43	0.9	3.4	43	40	31	69
Diphtheria and Memb. Croup,	25	18	100	111	102	99	5	7	18	23	4.7	6.6	44	42	19	11
Erysipelas, ...	—	—	—	5	—	1	—	—	—	4	—	—	—	18	—	—
Cholera, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal Fever, ...	—	—	4	3	1	—	3	—	—	—	75.0	100.0	28	—	20	32
Ophthalmia Neonatorum, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trachoma, ...	—	—	3	4	2	1	—	—	1	3	—	—	20	14	—	—
Acute Encephalitis Lethargica,	—	—	1	1	1	1	—	—	—	—	—	—	43	28	—	—
Acute Poliomyelitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Primary Pneumonia, ...	40	25	294	174	229	130	65	40	29	22.1	23.5	—	32	35	7	12
Acute Influenzal Pneumonia,	6	—	59	18	51	12	13	5	1	20.3	29.4	—	29	53	7	3
Malaria, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery, ...	—	—	24	17	23	17	1	—	—	—	4.2	—	26	21	4	—
Relapsing Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis, ...	—	—	5	1	4	—	1	1	—	20.0	100.0	—	4	—	24	33
• Other forms of Tuberculosis,	—	—	4	10	3	5	1	5	—	25.0	50.0	—	75	74	11	10
Measles, ...	—	2	80	73	57	48	7	5	16	22	10.9	9.4	28	24	19	7
German Measles, ...	—	—	8	10	8	10	—	—	—	—	—	—	16	13	—	—
Whooping-Cough, ...	—	—	44	38	33	31	11	7	—	25.0	18.4	—	51	52	7	8
Chickenpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bubo, ...	—	—	1	—	1	—	—	—	—	—	—	—	17	—	—	—
Mumps, ...	—	—	—	2	—	2	—	—	—	—	—	—	—	15	—	—
Child with Mother, ...	—	—	—	2	—	2	—	—	—	—	—	—	—	35	—	—
No apparent Disease, ...	—	—	1	1	1	1	—	—	—	—	—	—	41	31	—	—
Others, ...	—	—	9	24	8	19	1	1	4	11.1	4.8	—	25	24	29	1
Totals,...	82	60	764	683	636	535	110	79	100	129	14.8	12.8	36	38	10	15



KNIGHTSWOOD HOSPITAL.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF CASES DISMISSED AND DEATHS DURING THE YEAR 1929.

Age.	Typhus Fever.	Enteric Fever.	Paratyphoid B.	Continued Fever.	Puerperal Fever.	Smallpox.	Scarlet Fever.	Diphtheria and Memb. Group.	Erysipelas.	Cholera.	Cerebro-spinal Fever.	Ophthalmia Neonatorum.	Trachoma.	Encephalitis Lethargica.	Poliomyelitis.	Polyneuritis.	Primary Pneumonia.	Influenza-Pneumonia.	Malaria.	Dysentery.	Relapsing Fever.	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Measles.	German Measles.	Whooping-Cough.	Chickenpox.	Ebola.	Mumps.	Child with Mother.	
Cases (including Deaths).																															
Male.	1	2	3	4	5	10	11	11	11	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total.	2	3	4	5	6	11	12	13	14	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Female.	1	2	3	4	5	10	11	11	11	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total.	2	3	4	5	6	11	12	13	14	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Deaths.																															
Male.	1	2	3	4	5	10	11	11	11	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total.	2	3	4	5	6	11	12	13	14	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Female.	1	2	3	4	5	10	11	11	11	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total.	2	3	4	5	6	11	12	13	14	18	25	35	45	45+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

KNIGHTSWOOD HOSPITAL—TABLE SHOWING ALTERATIONS IN  
DIAGNOSIS OF CASES DISMISSED AND DEATHS DURING 1929.

ORIGINALLY CERTIFIED AS

Diagnosis altered to.	Enteric Fever.	Continued and Undefined Fever.	Scarlet Fever.	Diphtheria.	Cerebro-spinal Fever.	Lethargica Encephalitis.	Acute Primary Pneumonia.	Dysentery.	Measles.	Other Affections.
Scarlet Fever, ...	-	-	-	-	-	-	1	-	-	-
Acute Primary Pneumonia, ...	1	-	-	-	2	-	-	-	-	-
Tuberculosis (all forms),	-	1	-	-	6	-	5	-	-	-
Measles, ...	-	-	1	1	-	-	-	-	-	-
Roseola, ...	-	-	9	-	-	-	-	-	2	-
Influenza and Influenza associated with other Diseases, ...	-	-	-	1	-	-	-	-	-	-
Other Diseases of the Respiratory System,	-	1	-	-	-	-	2	-	-	-
Diseases of the Digestive System, ...	-	-	1	4	1	1	-	1	-	-
Dysentery, ...	1	-	-	-	-	-	-	-	-	4
All other Diseases, ...	-	-	-	1	-	-	1	-	-	-
No apparent Disease, ...	-	1	1	-	-	-	-	-	-	-

KNIGHTSWOOD HOSPITAL.—PULMONARY TUBERCULOSIS.—TABLE SHOWING CASES DISMISSED AND DEATHS  
DURING THE YEAR 1929, AND THE AVERAGE RESIDENCE.

Pulmonary Cases—	Number of Cases Dismissed.	Number of Deaths.	Average Residence.						
			—30	—50	—100	—150 days.	—200	—300	+300
Early, - - -	2	...	...	...	1	1	...	...	...
Intermediate, - - -	58	...	3	8	21	14	8	2	2
Advanced, - - -	121	56	29	18	24	43	38	18	7
Total, - - -	181	56	32	26	46	58	46	20	9

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## SHIELDHALL FEVER HOSPITAL.

During the year 1,018 patients passed through the hospital, a decrease of 101, as compared with the previous twelve months. The general death rate was 9.0 per cent., as compared with 11.4 per cent. for 1928. Two nurses contracted scarlatina and one diphtheria, all within a few weeks of taking up duty; and there were five cases of rubella among members of the staff.

With few exceptions, only scarlatina, diphtheria, and pneumonia patients were received. It was found impossible to staff a ward, as in previous years, for measles. The proposed increased accommodation for nurses should obviate this difficulty in future.

*Scarlatina*.—330 patients were treated, and there were no deaths: an indication that the cases were, on the whole, of a low virulence. In the early part of the year, however, there were many of the mildly septic variety, and discharging ears and noses were very common, in spite of almost routine serum administration. Nasal discharges were particularly troublesome. The condition is undoubtedly infectious, and in ideal circumstances such patients would be kept apart from other children.

The work of the Aural Surgeon, which was practically confined to the treatment of these complications of scarlatina, may be indicated thus:—No. of patients attended, 51; operations: tonsillectomy, 31; mastoid operation, 2.

The bulk of the operative work, which greatly exceeded that of 1928, was performed in the first four months of the year. Results:—

				Otorrhœa.	Rhinorrhœa.
Immediate cessation of discharge,	...	...	...	4	7
Gradual improvement,	...	...	...	7	2
No improvement,	...	...	...	9	4
				<hr/> 20	<hr/> 13
				<hr/> <hr/>	<hr/> <hr/>

Cervical adenitis remains a common complication of scarlatina (52 cases), and arthritis and albuminuria are also of fairly frequent occurrence. Not more than two-thirds of the number of patients enjoy an uninterrupted convalescence.

*Diphtheria*.—253 patients were treated. The mortality-rate of 7.9 per cent. is the highest for several years, being almost double that of 1928. One is justified in saying that with earlier notification this figure might be very much reduced. A large proportion of patients reach hospital with the disease at a very advanced stage, so that little benefit can be expected from the administration of serum. The types of diphtheria were: faucial, 202; faucial and nasal, 15; faucial and laryngeal, 12; laryngeal, 14; conjunctival, 1; bacteriological, 9. No fewer than five hæmorrhagic cases were observed, all of which were fatal. Eight patients required tracheotomy, and of these five made a good recovery.



Analysis of tracheotomy cases dealt with during the past four years reveals the following figures:—

Age.	Cases.	Deaths.	Mortality per cent.
Under 1 year, ...	3	—	—
1 to 2 years, ...	6	2	33·3
2 „ 3 „ ...	6	3	50·0
3 „ 4 „ ...	5	1	20·0
4 „ 7 „ ...	6	1	16·6
Total, ...	<u>26</u>	<u>7</u>	<u>26·9</u>

The deaths were as follows:—Immediate (during operation), 1; from low obstruction, unrelieved by operation, 2; from pneumonia following operation, 1; from toxæmia (faucial and nasal cases), 3.

With the exception noted, a moribund patient, deaths occurred from the second to the ninth day after operation. Assuming the toxæmic cases to be inevitably fatal, the deaths directly associated with laryngeal diphtheria were four, or 15·4 per cent. of cases operated on.

*Pneumonia.*—As in 1928, pneumonia cases were dealt with in larger number than any other infection, 376 patients being treated. The mortality rate (17·8 per cent.) is very little less than that of last year, but in 1929 fewer babies and more adults died. As in the case of diphtheria, many pneumonia patients are sent to hospital so late that no benefit can be looked for from hospital treatment. The number of deaths, indeed, among elderly persons soon after admission suggests that the ambulance journey, which is frequently of several miles, is definitely harmful.

Pneumococcal meningitis was responsible for four deaths. Empyema complicated seven cases. Five of these, treated by operation, made a satisfactory recovery, while a sixth, proving tuberculous, was transferred to Ruchill. A seventh case, treated by aspiration, ended fatally.

*Other Diseases.*—The remaining 59 cases included 16 of whooping-cough, 9 of rubella, and one each of enteric, cerebro-spinal fever, and poliomyelitis, while non-infectious conditions numbered 31. Forty-nine diagnoses, or 4·8 per cent., were revised during the year.

Cross infections were particularly common in 1929. While no case of measles occurred in the hospital, rubella was rife in the early part of the year, and affected both patients and staff. Much more troublesome was chickenpox, small epidemics of which occurred in three wards in succession, in each case imported by a child incubating the infection on admission. The crippling effect of such outbreaks on a small hospital, which has no ward set apart for varicella, is considerable.

WILLIAM NAPIER,  
*Physician-Superintendent.*

31st March, 1930.

SHIELDHALL HOSPITAL—STATEMENT OF CASES TREATED ACCORDING TO SEX.  
DATA BASED ON DISMISSALS AND DEATHS FOR YEAR 1929.

Disease.	In Hospital 1st Jan.		Admitted.		Died.		Dismissed.		Remaining in Hospital at 31st Dec.		Mortality per cent.		Average Residence (Days).			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Enteric Fever, ...	—	—	—	1	—	—	—	1	—	—	—	—	—	9	—	—
Scarlet Fever, ...	24	23	116	207	—	—	123	207	17	23	—	—	42	41	—	—
Diph. and Memb. Croup,	20	14	115	141	9	11	110	123	16	21	7.6	8.2	43	45	10	6
Cerebro-spinal Fever, ...	—	—	—	1	—	1	—	—	—	—	—	100.0	—	—	—	17
Acute Poliomyelitis, ...	1	—	—	—	—	—	1	—	—	—	—	—	63	—	—	—
Lobar Pneumonia, ...	8	3	140	59	15	7	125	51	8	4	10.7	12.1	27	27	12	9
Broncho-Pneumonia, ...	12	7	96	77	31	14	66	67	11	3	32.0	17.3	27	29	6	7
Measles, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
German Measles, ...	—	—	3	6	—	—	3	6	—	—	—	—	13	14	—	—
Whooping-Cough, ...	—	—	6	10	—	1	6	9	—	—	—	10.0	62	56	—	3
Other Affections, ...	—	—	18	13	3	—	15	13	—	—	16.7	—	21	21	10	—
Total, ...	65	47	494	515	58	34	449	477	52	51	11.4	6.7	37	30	11	8

# FIELDHALL HOSPITAL—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF CASES DISMISSED, AND DEATHS DURING THE YEAR 1929

Age.	Paratyphoid B.	Enteric Fever.	Puerperal Fever.	Scarlet Fever.	Diph. and Membr. Group.	Cerebro-spinal Fever.	Acute Poliomyelitis.	Acute Lobar Pneumonia.	Acute Broncho-Pneumonia.	Non-Pulmonary Tuberculosis.	Measles.	German Measles.	Whooping-Cough.	Other Affections.	Total.
Dismissals (including Deaths).															
— 1	—	—	—	2	6	—	—	2	44	—	—	—	—	3	57
— 2	—	—	—	6	12	—	—	2	26	—	—	—	2	2	50
— 3	—	—	—	10	8	—	1	5	11	—	—	—	1	—	36
— 4	—	—	—	7	12	—	—	4	7	—	—	1	1	—	32
— 5	—	—	—	14	11	—	—	4	3	—	—	1	1	—	34
—10	—	—	—	53	42	—	—	26	6	—	—	1	1	5	134
—15	—	—	—	19	12	—	—	14	—	—	—	—	—	2	47
—25	—	—	—	7	12	—	—	25	—	—	—	—	—	3	47
—35	—	—	—	2	3	—	—	11	—	—	—	—	—	1	17
—45	—	—	—	2	1	—	—	17	—	—	—	—	—	1	21
45+	—	—	—	1	—	—	—	30	—	—	—	—	—	1	32
Total,	—	—	—	123	119	—	1	140	97	—	—	3	6	18	507
Deaths only.															
— 1	—	—	—	1	4	1	—	—	22	—	—	—	3	3	34
— 2	—	—	—	4	5	—	—	—	25	—	—	—	—	3	37
— 3	—	—	—	13	5	—	—	1	15	—	—	—	4	1	39
— 4	—	—	—	11	15	—	—	1	4	—	—	—	—	—	31
— 5	—	—	—	17	7	—	—	1	5	—	—	—	—	2	32
—10	—	1	—	79	57	—	—	17	4	—	—	1	3	1	163
—15	—	—	—	44	10	—	—	7	2	—	—	2	—	1	66
—25	—	—	—	25	20	—	—	16	—	—	—	2	—	2	65
—35	—	—	—	10	4	—	—	5	—	—	—	1	—	—	20
—45	—	—	—	3	6	—	—	4	1	—	—	—	—	—	14
45+	—	—	—	—	1	—	—	6	3	—	—	—	—	—	10
Total,	—	1	—	207	134	1	—	58	81	—	—	6	10	13	511
Deaths only.															
— 1	—	—	—	—	2	—	—	—	19	—	—	—	—	2	23
— 2	—	—	—	—	2	—	—	—	8	—	—	—	—	—	10
— 3	—	—	—	—	1	—	—	1	4	—	—	—	—	—	6
— 4	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
— 5	—	—	—	—	1	—	—	1	—	—	—	—	—	—	2
—10	—	—	—	—	2	—	—	—	—	—	—	—	—	—	2
—15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—35	—	—	—	—	—	—	—	2	—	—	—	—	—	—	2
—45	—	—	—	—	—	—	—	2	—	—	—	—	—	—	2
45+	—	—	—	—	—	—	—	9	—	—	—	—	—	1	10
Total,	—	—	—	—	9	—	—	15	31	—	—	—	—	3	58
Deaths only.															
— 1	—	—	—	—	—	1	—	—	9	—	—	—	—	—	10
— 2	—	—	—	—	—	—	—	—	2	—	—	—	—	—	2
— 3	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
— 4	—	—	—	—	3	—	—	1	—	—	—	—	—	—	4
— 5	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
—10	—	—	—	—	7	—	—	—	—	—	—	—	1	—	8
—15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—45	—	—	—	—	—	—	—	3	—	—	—	—	—	—	3
45+	—	—	—	—	—	—	—	3	2	—	—	—	—	—	5
Total,	—	—	—	—	11	1	—	7	14	—	—	—	1	—	34

SHIELDHALL HOSPITAL.—TABLE SHOWING ALTERATIONS IN DIAGNOSIS  
CASES DISMISSED AND DEATHS DURING THE YEAR 1929.

Diagnosis Altered to	ORIGINALLY CERTIFIED AS					Whoopi Cough
	Scarlet Fever.	Scarlet Fever and Diph.	Diphtheria.	Pneumonia.		
Enteric Fever ... ..	—	—	—	1	—	—
Scarlet Fever ... ..	—	1	2	1	—	—
Scarlet Fever and other diseases	1	—	—	—	—	—
Diphtheria, ... ..	—	—	—	2	—	—
Diphtheria and other diseases,	—	—	1	—	—	—
Cerebro-spinal Fever, ... ..	—	—	—	1	—	—
Pneumonia, ... ..	2	—	3	—	—	1
German Measles, ... ..	7	—	—	—	—	—
Whooping-cough, ... ..	—	—	1	1	—	—
Influenza, ... ..	—	—	—	2	—	—
Enteritis, ... ..	1	—	—	—	—	—
Bronchitis, ... ..	—	—	—	1	—	—
Nephritis, ... ..	1	—	—	—	—	—
Vincent's Angina, ... ..	—	—	1	—	—	—
Retro-pharyngeal abscess, ... ..	—	—	2	—	—	—
Laryngismus Stridulus, ... ..	—	—	1	—	—	—
Laryngitis, ... ..	—	—	1	—	—	—
Impetigo, ... ..	—	—	—	1	—	—
Erythema, ... ..	2	—	—	—	—	—
No apparent disease, ... ..	9	—	—	2	—	—

## ROBROYSTON TUBERCULOSIS HOSPITAL.

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*Notes on Surgical Tables.*

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## GLANDS.

*Surgical Table No. 1.*—Little need be said of this table. The number of patients dismissed is precisely the same as for 1928. All nine had well advanced lesions, four being classified as intermediate, between early and late, and the remaining five being definitely advanced. Thus since 1925 there has been a considerable fall in the number of such cases treated, until in the past two years the numbers dismissed represent only 16·7 per cent. of the total for 1925. The reasons for this tendency downwards include the growing attention paid to teeth and tonsils and the treatment of the earlier lesions at a dispensary, and are more fully mentioned in the report for 1927. The lesions were treated in the same way and roughly in the same proportion as last year.

## SPINE.

*Surgical Table No. 2.*—Forty-one cases of spinal tuberculosis were dismissed or died during the year 1929. Only 39 per cent. are classified as "dismissed fit," a considerable drop from last year's figure of 50 per cent. Again it must be pointed out that this is not a fair index of the work done. Of the total output, 46·3 per cent. "left at own or parent's request" or "for other reasons." The latter factor applies chiefly to the younger patients and cover cases transferred with infectious disease (and to be re-admitted) or sent, after completion of their orthopædic treatment, to some convalescent home. The 19 patients representing this 46·3 per cent. of the total include 12 who left of their own request. It is noteworthy that eight of these were over 20 years of age. Such patients are on the average not so tolerant of the necessarily prolonged treatment, and operations such as Albee's, designed to shorten residence in hospital, are possible in only a very few.

Rather over half of the patients dismissed were admitted without abscess or sinus, and in such it must be reiterated that the prognosis is infinitely better. Five patients died, only one of them under 20 years of age. The average duration of residence was 733 days, an increase on the figure for 1928. Treatment has been on the same lines as last year.

## BONES OTHER THAN SPINAL.

*Surgical Table No. 3.*—Under this table come lesions of long bones, cranial bones, &c. Sixteen patients suffering from such lesions were discharged during 1929 and there were no deaths. The



prevalence of abscess and sinus formation on admission has been yearly remarked on since the report of 1925 and this year the position is similar. 62.5 per cent. had sinuses, 25 per cent. abscess without sinuses, and 12.5 per cent. had neither abscess nor sinus. The results are, however, consistently good and deformity seldom results; this year 11 out of the 16 were dismissed fit for work or school, only two being sent out unfit. The average duration of residence was 444 days, a marked drop from last year. The variability of the residence figure is remarked on in the report for 1928 and the reasons discussed.

#### HIP JOINT.

*Surgical Table No. 4.*—Thirty-one cases of tuberculous disease of the hip were discharged during 1929. Of that number 58 per cent. were dismissed with healed lesions, this constituting a distinct rise above last year's figure. In conjunction with this fact it is to be noted that 26 of the 31 dismissals were on admission free from abscess and sinus. Twenty-seven patients had deformity when admitted and only two were dismissed with this deformity unimproved. Both these patients were over 25 years of age. There were no deaths. The average residence was 697 days, a slight increase over last year's figure.

#### JOINTS OTHER THAN HIP.

*Surgical Table No. 5.*—The number of cases dismissed coming under this table was 54, a drop of 21 from last year's figure. Of these, 59.2 per cent. were dismissed healed and fit. The proportion of patients on whom it was required to operate remains much as before, the disease in most of these affecting the knee joint. Three patients, all above 20 years of age, died. Functional results continue to be good, and in two patients only was deformity found impossible to correct. The average residence was 437 days, well under last year's figure.

#### ABDOMINAL TUBERCULOSIS.

*Surgical Table No. 6.*—Fifty cases were dismissed in 1929 after treatment for abdominal tuberculosis, a drop of 22 from last year's total. By far the greatest number of these suffered from the chronic forms of the disease. Thirty-six per cent. were dismissed fit for work or school and 24 per cent. for other reasons. The explanation offered in the commentary on Table 2 applies here also. Treatment remains on general lines and includes heliotherapy in suitable cases. Only 6 per cent. of those discharged had operative treatment. Residence averaged 199 days, much the same as in 1928.

#### MULTIPLE LESIONS.

*Surgical Table No. 7.*—This table covers cases having several lesions and 38 such patients were dismissed or died during 1929. Rather under half of these were sent out fit, and rather under one-third

died. The prognosis in patients classed under this heading must ever remain very guarded. On the average 574 days were spent in hospital by these patients.

#### GENITO-URINARY AND MISCELLANEOUS.

*Surgical Table No. 8.*—Thirteen cases of genito-urinary disease and three of skin disease were dismissed in 1929. Of the total of 16 cases in this table 62.5 per cent. were dismissed fit. The preponderance of operative over other forms of treatment is accounted for by the large proportion of genito-urinary lesions to other forms.

#### TREATMENT.

There has been little alteration in the mode of treatment of non-pulmonary tuberculosis in the past year, conservative measures being adopted wherever possible.

*Artificial Heliotherapy.*—This continues to play a considerable part in treatment, and with definitely beneficial results both local and general. In many cases the improved general health has been verified by a corresponding increase in the suspension stability of the blood corpuscles. In addition to the main centre in which transportable or ambulant cases receive treatment, two of the wards have lamps installed. Additional cases thus receive heliotherapy and pressure on the main centre is relieved. In the opinion of those competent to judge, those patients who, though bedridden, can thus receive treatment in the wards are definitely better nourished and more active than similar cases not so receiving treatment. Artificial heliotherapy is supported by sunlight when available, the dosage employed being that of Rollier adopted to local conditions.

During the year 1929 close on 15,000 exposures were given to 262 patients.

*Aspirations and Injections.*—Aspiration remains the method of choice in treating complicating collections of tuberculous debris. Done at suitable intervals and with customary care, aspiration results in complete emptying of the abscess and sclerosis of its walls, without any material risk to the skin. Over 1929 it is gratifying to note that a much smaller number of abscesses were treated in which the skin was already damaged and infection already present or imminent. For these, incision must take place in the majority, followed by immediate persistent treatment of the resultant sinus. Those abscesses whose contents were too thick to allow of aspiration were treated by injection of modifying fluids as recommended by Calot and others, and later by aspirating the resultant liquid contents. Only rarely has such an abscess to be opened and then only with very strict asepsis. During the year 1,533 aspirations were done and 100 modifying and 300 paste injections into sinuses and 12 other injections were given.

*Operations.*—Little need be said of operative treatment and its indications. The desirability of correcting some types of deformity by open operation, the necessity of providing drainage in infected cases, and the scope of operative methods in inter-current illness have been dealt with in previous reports. In adults particularly conservative measures are often entirely unsuccessful. During 1929, 65 major and 111 minor operations were done, a slight increase on last year's figures.

*Appliances.*—CertaImid splints continue to be made, and last year 120 appliances were completed. In addition 221 plaster splints were built. The principles involved in the design of the permanent certaImid splints remain as before, but the jury mast type of jacket for cervical spines has been superseded by a type giving more support and less freedom to the recently treated lesion; it is in addition less unsightly. During the year certaImid splints designed to maintain a tuberculous shoulder joint in abduction were made with considerable success and economy.

*Radiology.*—The number of patients examined and of plates taken show a fall from last year's figure. Some saving has been effected in the lessening tendency to skiagraph patients suffering from known advanced chronic phthisis. As a result 628 patients were examined and 1,374 radiograms taken.

*Pulmonary Tuberculosis.*—Methods of treatment are in the majority of cases practically confined to rest and graduated walks. Throughout 1929 a small number of patients presented themselves, in whom surgical measures seemed to offer greatest hope.

Artificial pneumothorax, phrenicectomy and thoracoplasty have therefore been done in selected cases with very promising results. The lack of a sufficiency of suitable cases and the proportionate paucity of patients treated by these methods does not, however, justify a detailed medical report. In a small number of suitable patients sanocrysin has been given. It is yet too early to give the results but in some cases sanocrysin definitely seems to offer prospects of a return to health. When combined with artificial pneumothorax, the progress made may be very considerable.

Throughout the year a considerable number of people, for the most part treated originally elsewhere, attended for refill of artificial pneumothorax. In all 103 refills were given. In cases where some activity of the lesion was suspected, a rough assessment of its degree was obtained by means of the blood sedimentation rate taken at regular intervals and appropriate treatment prescribed.

## DENTAL TREATMENT.

During the year Dr. Hugh MacKay, L.D.S., made 48 visits, and the dental work carried out is as follows:—

Fillings—Amalgam, ... ..	89
„ Cement,... ..	66
Dressings and temporary fillings, ... ..	10
Extractions with local anæsthetic, ... ..	480
Extractions with general anæsthetic, ... ..	120
Scaling, ... ..	300
Pulpitis cases, ... ..	18
Examinations, ... ..	200 (Approx.)

## LABORATORY.

The following examinations have been carried out during the year:—

Sputum for tubercle bacillus, ... ..	1,583
Throat cultures for diphtheria, ... ..	95
Urines (microscopical investigations, cultures, &c.),	208
Cultures from sinuses, ... ..	54
Necropsies, ... ..	15
Miscellaneous, ... ..	54

## EDUCATION.

The education of ambulant and bed children has been continued along the usual lines. The average number of children on the rolls was 126, and the average daily number receiving tuition 106.

## PNEUMONIA.

At the end of the appendix is given a table showing particulars of cases of pneumonia treated when accommodation had to be provided here during pressure at the fever hospitals.

*Table A.*—During the year 21 non-tuberculous patients were treated, and the subjoined statement indicates the nature of their disease:—

## Disease.

Osteoarthritis of knee; Ovarian Cyst; Disseminated Sclerosis, Empyema, Pyelitis, General Debility, Perthes' Disease, Carcinoma of Stomach, Acute Enteritis, Toxic Arthritis of both ankles, Non-tuberculous Arthritis of knee, Unresolved Pneumonia, Calculous Pyonephrosis, Dysmenorrhœa, Bronchial Asthma, Periostitis of Tibia, Mastoiditis and Lymphadenitis, one each; Lymphadenoma and Tubercular Peritonitis (under observation), two each ... ..	= 21
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The following table indicates the state of nutrition of the various groups of tubercular patients on admission:—

Disease.					Good.	Fair.	Poor.	Total
Pulmonary Tuberculosis—								
Early,	...	...	...	...	2	13	5	20
Intermediate,	...	...	...	...	10	22	11	43
Advanced,	...	...	...	...	10	36	95	141
Non-Tuberculous,	...	...	...	...	6	12	3	21
Other Forms of Tuberculosis—								
Spine,	...	...	...	...	11	20	10	41
Glands,	...	...	...	...	4	2	3	9
Bones other than spinal,	...	...	...	...	5	7	4	16
Hip joint,	...	...	...	...	10	17	4	31
Joints other than hip,	...	...	...	...	23	22	9	54
Abdomen,	...	...	...	...	10	13	27	50
Multiple,	...	...	...	...	5	18	15	38
Genito-Urinary and miscellaneous,	...	...	...	...	4	8	4	16
Totals,					100	190	190	480

JOHN WATSON,  
Medical Superintendent.

26th February, 1930.



## PNEUMONIA CASES TREATED IN ROBROYSTON HOSPITAL.

STATEMENT SHOWING TYPE OF DISEASE, AGE AND SEX  
DISTRIBUTION, AND DEATHS (raised figures).

Age.	Lobar.		Broncho-Pneumonia.		Tuberculosis.		Influenza.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Under 1	—	—	—	1	—	—	—	—	—	1
5—9	—	—	1	1	—	—	—	—	1	1
10—14	—	2	—	—	—	—	—	2	—	4
15—19	2	—	6 <sup>1</sup>	—	2 <sup>1</sup>	—	—	—	10 <sup>2</sup>	—
20—29	—	5 <sup>1</sup>	4 <sup>1</sup>	2	—	—	—	1	4 <sup>1</sup>	8 <sup>1</sup>
30—39	5 <sup>2</sup>	2	3	2	—	—	—	—	8 <sup>2</sup>	4
40—49	1 <sup>1</sup>	2 <sup>2</sup>	1	7 <sup>2</sup>	1	—	—	—	3 <sup>1</sup>	9 <sup>4</sup>
50—59	—	1 <sup>1</sup>	—	2 <sup>1</sup>	—	—	—	—	—	3 <sup>2</sup>
60—69	1 <sup>1</sup>	—	—	1	—	—	—	—	1 <sup>1</sup>	1
Total,	9 <sup>1</sup>	12 <sup>1</sup>	15 <sup>2</sup>	16 <sup>3</sup>	3 <sup>1</sup>	—	—	3	27 <sup>7</sup>	31 <sup>7</sup>
	21 <sup>8</sup>		31 <sup>5</sup>						58 <sup>14</sup>	

## LOBAR PNEUMONIA.

21 cases.

Uncomplicated 7. Average Residence in Hospital, 26 days.

Complicated 6. M. 2. Delayed Resolution (2).

F. 4. Otitis Media (2).

Pneumococcal Empyema.

Streptococcal Empyema, Septicæmia:—  
delivered of full time child on 5th  
day of illness.

Fatal Cases: 8.

	Age.	Died : Day of illness.	Remarks.
Males, ... ..	30	8	Malaria complicating.
	30	10	Bilateral pneumonia.
	45	10	Portal cirrhosis of liver complicating.
	67	8	Bilateral disease.
Females, ... ..	22	11	Bilateral pneumonia.
	42	7	Two lobes consolidated.
	48	5	Bilateral pneumonia.
	58	12	Empyema complicating.

## BRONCHO PNEUMONIA.

31 cases.

Uncomplicated: 17. Average Residence in Hospital, 30 days.

Complicated 9. M. 7. Chronic Bronchitis.  
 Follicular Tonsilitis (2).  
 Quinsy.  
 Acute Pharyngitis.  
 Streptococcal Otitis Media and Furunculosis.  
 Streptococcal Otitis Media.

F. 2. Chronic Bronchitis and Asthma.

Fatal Cases 5.

	Age.	Died : Day of illness.	Remarks.
Males, ... ..	16	15	—
	23	19	—
Females, ... ..	42	9	Chronic bronchitis and emphysema complicating.
	42	19	—
	58	14	—

## TUBERCULOSIS.

3 cases.

Age.	Type of Disease.	Sputum.	Termination
15	Encysted pleurisy, ... ..	Nil,	Transferred to sanatorium.
19	Acute broncho-pneumonia, ...	T.B.,	Died.
46	Chronic tuberculosis with superimposed bronchitis.	T.B.,	Dismissed afebrile in 63 days.

## INFLUENZA.

There were three cases of uncomplicated influenza with no intrapulmonary disease. Average residence in hospital, nine days.

The above analysis details the types of disease encountered, their age and sex distribution, their complications, and the duration of convalescence as indicated by the retention of the patient in hospital. The duration of this period, 26 and 30 days respectively in uncomplicated cases in the two main groups, does not appear to be prolonged. An effort has been made to include under Lobar Pneumonia only cases where the diagnosis was clear clinically (having regard to onset, physical signs and type of fever) or was confirmed *post mortem*. Particulars are furnished in the fatal cases with reference to duration of illness, age, type and extent of disease and complicating conditions.

ROBROYSTON HOSPITAL.—TABLE SHOWING CASES DISMISSED AND DEATHS DURING THE YEAR 1929,  
AND THE AVERAGE RESIDENCE.

Disease.	Number of Cases Dismissed.	Number of Deaths.	Duration of Residence.							Average.
			—30	—50	—100	—150 Days.	—200	—300	+300	
Pulmonary Tuberculosis—										
Early, ... ..	20	—	1	1	3	4	3	2	6	221
Intermediate, ... ..	42	1	3	3	6	3	5	5	18	339
Advanced, ... ..	85	56	13	12	24	24	13	14	41	249
Diagnosis not confirmed, ...	10	1	3	—	3	2	2	1	—	100
Other Forms of Tuberculosis—										
Glands ... ..	9	—	1	—	1	—	1	1	5	373
Spine, ... ..	36	5	4	—	1	4	1	3	28	733
Bones other than spine,	16	—	—	1	1	4	1	1	8	444
Hip Joint, ... ..	31	—	1	—	2	1	1	—	26	697
Joints other than hip, ...	51	3	5	1	3	2	3	9	31	437
Abdomen, ... ..	38	12	7	4	6	8	7	11	7	199
Multiple, ... ..	26	12	3	1	1	2	3	4	24	574
Genito-Urinary, ... ..	13	—	—	2	2	—	2	1	6	360
Miscellaneous, ... ..	3	—	—	—	—	—	2	—	1	304
Diagnosis not confirmed,	9	1	2	—	4	2	2	—	—	92
Total, ... ..	389	91	43	25	57	56	46	52	201	373



SURGICAL CASES: TABLE No. 1.

## GLANDS.

Age Groups.	CONDITION ON ADMISSION.			Total.	TREATMENT.				Total.	CONDITION ON DISMISSAL.				Total.	DISMISSED.					Total.	COMPLICATIONS.									
	Early.	Intermediate.			Late.	Operation.	Aspiration.	Tuberculin.		Other.	Well.	Improved.	Healed.		Discharging.	Fit.	Unfit.	At own or Parents' request.	For Other Reasons.		Died.	Tubercular.	Other.							
- 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
- 2	-	-	1	1	1	-	-	-	1	-	-	1	-	-	-	-	-	1	-	-	1	-	-	1	-	-	-	-		
- 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
- 5	-	-	2	2	-	1	-	1	2	1	-	2	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-		
-10	-	1	-	1	-	-	-	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-		
-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-25	-	1	1	2	1	1	-	-	2	-	-	2	-	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	
-35	-	2	-	2	1	-	-	1	2	-	1	1	-	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	
-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45+	-	-	1	1	1	1	-	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total, ...	-	4	5	9	4	2	-	3	9	1	1	6	1	-	5	-	1	3	-	-	9	3	-	-	-	-	-	-	-	-



SURGICAL CASES: TABLE No. 2. SPINE.

Age Groups.	CONDITION ON ADMISSION.					TREATMENT.					CONDITION ON DISMISSAL.			DISMISSED.					COMPLICATIONS.							
	Abscess.	Sinus.	Abscess and Sinus.	No Abscess or Sinus.	Total.	Deformity on Admission.	Operation.	Aspiration.	Aspiration and Injection.	Appliances.	Other.	Total.	Deformity on Dismissal or Death.	Healed, including Arrested.	Improved.	Not Improved.	Total.	Fit.	Unfit.	At Own or Parents' request.	For other Reasons.	Died.	Total.	Tubercular.	Other.	
- 2	—	—	—	1	1	1	—	—	—	1	—	1	—	1	—	—	—	1	1	—	—	—	—	1	—	—
- 3	—	—	—	1	1	1	—	—	—	1	—	1	1	1	—	—	—	1	1	—	—	—	—	1	—	—
- 4	—	—	—	3	3	3	—	—	—	3	—	3	3	3	—	—	—	3	1	—	—	2	—	3	1	1
- 5	1	—	—	2	3	2	—	1	—	2	—	3	2	1	2	—	—	3	1	—	1	1	—	3	1	—
-10	4	—	1	3	8	7	—	4	1	3	—	8	4	4	3	—	—	7	4	—	1	2	1	8	1	5
-15	3	—	—	2	5	5	—	3	—	2	—	5	3	4	—	1	1	5	3	—	1	1	—	5	3	—
-20	1	—	—	1	2	2	—	1	—	1	—	2	1	1	1	—	—	2	1	—	1	—	—	2	1	1
-25	4	—	—	2	6	4	1	4	—	1	—	6	3	2	2	1	1	5	2	—	3	—	1	6	2	1
-35	3	—	—	4	7	4	—	3	—	2	2	7	4	2	2	1	1	5	2	1	2	—	2	7	1	2
-45	—	—	1	1	2	2	—	—	—	2	—	2	2	—	—	1	1	1	—	—	—	1	1	2	1	1
45+	—	—	2	1	3	3	—	—	1	1	1	3	—	—	—	3	3	3	—	—	3	—	—	3	2	—
Total, ...	16	—	4	21	41	34	1	16	2	19	3	41	23	19	10	7	36	16	1	12	7	5	41	13	11	

SURGICAL CASES: TABLE No. 3. BONES other than Spinal.

Age Groups.	CONDITION ON ADMISSION.				Deformity on Admission.	TREATMENT.				Total.	Deformity on Dismissal.	CONDITION ON DISMISSAL.		Total.	DISMISSED.				Total.	COMPLICATIONS.					
	Abscess.	Sinus.	Ulceration.	No Abscess, Sinus, or Ulceration.		Total.	Operation.	Aspiration.	Aspiration and Injection.			Appliances.	Other.		Improved.	Not Improved.	Fit.	Unfit.			At Own or Parents' request.	For other Reasons.	Died.	Tubercular.	Other.
- 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 4	1	1	—	—	2	1	—	—	—	2	1	1	1	1	—	—	—	—	—	—	1	—	2	1	
- 5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
-10	1	3	—	—	4	3	1	1	2	—	2	—	2	3	—	—	—	—	—	—	1	—	4	—	
-15	1	1	—	2	4	1	1	—	—	2	4	—	3	1	—	—	—	—	—	—	—	4	—	1	
-20	—	1	—	—	1	—	—	1	—	—	1	—	1	1	—	—	—	—	—	—	—	1	—	1	
-25	—	2	—	—	2	—	1	1	—	—	2	1	1	1	—	1	—	—	1	—	—	2	—	—	
-35	1	1	—	—	2	—	2	—	—	—	2	—	2	2	—	—	2	2	—	—	—	2	—	1	
-45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
45+	—	1	—	—	1	—	—	—	—	1	1	—	1	—	—	—	—	—	—	—	—	1	—	1	
Total, ...	4	10	—	2	16	5	5	1	3	2	5	1	11	4	1	16	11	2	1	—	2	—	16	—	5

SURGICAL CASES : TABLE No. 4. HIP JOINT.

Age Groups.	CONDITION ON ADMISSION.				TREATMENT.					DEFORMITY ON DISMISSAL.		CONDITION ON DISMISSAL.			DISMISSED.					COMPLICATIONS.				
	Abscess.	Sinus.	No Abscess or Sinus.	Total.	Operation.	Aspiration.	Infection.	Appliances.	Other.	Total.	Improved.	Not Improved.	Healed, including Arrested.	Improved.	Not Improved.	Fit.	Unfit.	At Own or Parents' request.	For other Reasons.	Died.	Total.	Tubercular.	Other.	
- 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 4	—	—	2	2	1	—	—	1	—	2	2	—	1	1	—	1	—	—	1	—	—	2	1	
- 5	—	—	1	1	—	—	—	1	—	1	1	—	—	1	—	—	—	—	1	—	1	—	1	
-10	1	1	7	9	4	1	—	4	—	9	9	—	5	4	—	6	—	1	2	—	9	1	5	
-15	—	—	9	9	7	2	—	7	—	9	7	—	8	1	—	7	2	—	—	—	9	1	—	
-20	—	1	3	4	2	1	—	1	1	4	2	—	4	—	—	2	2	—	—	—	4	2	—	
-25	—	—	3	3	3	1	—	2	—	3	3	—	2	1	—	2	1	—	—	—	3	—	—	
-35	—	2	1	3	3	—	—	2	1	3	1	2	1	—	2	—	—	3	—	—	3	—	3	
-45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
45+	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Total, ...	1	4	26	31	27	9	1	1	18	2	31	25	2	21	8	2	31	18	5	4	—	31	5	10

SURGICAL CASES : TABLE No. 5. JOINTS other than Hip.

Age Groups.	CONDITION ON ADMISSION.				Deformity on Admission.	TREATMENT.					DEFORMITY ON DISMISSAL.		CONDITION ON DISMISSAL.			Total.	DISMISSED.				Total.	COMPLICATIONS.			
	Abscess.	Sinus.	No Abscess or Sinus.	Total.		Operation.	Aspiration.	Injection.	Appliances.	Other.	Improved.	Not Improved.	Healed, including Arrested.	Improved.	Not Improved.		Fit.	Unfit.	At Own or Parents' request.	For other Reasons.		Died.	Tubercular.	Other.	
- 1	—	—	1	1	1	—	—	—	1	—	1	—	1	—	—	1	1	—	—	—	1	—	1		
- 2	—	1	—	1	1	—	—	—	—	1	1	—	—	—	—	1	1	—	—	—	1	—	1		
- 3	1	—	—	1	1	—	1	—	—	1	1	—	1	—	—	—	—	—	1	—	—	1			
- 4	1	—	3	4	2	—	1	—	3	—	4	2	—	4	—	—	4	4	—	—	4	—	—		
- 5	—	1	2	3	2	1	—	—	2	—	3	2	—	2	1	—	3	1	—	—	3	—	—		
-10	3	4	12	19	11	3	2	2	12	—	19	10	1	16	3	—	19	12	2	—	5	—	19		
-15	1	—	5	6	2	—	—	—	3	3	6	2	—	4	2	—	6	3	—	2	1	—	6		
-20	—	3	2	5	2	—	—	1	4	—	5	2	—	5	—	—	5	3	—	—	2	—	5		
-25	4	3	2	9	4	3	3	—	3	—	9	3	1	6	1	1	8	4	—	4	—	1	9		
-35	2	1	—	3	2	1	1	—	1	—	3	2	—	2	—	—	2	2	—	—	—	1	3		
35+	—	1	1	2	—	1	—	—	1	—	2	—	—	1	—	—	1	1	—	—	—	1	2		
Total ...	12	14	28	54	28	9	8	3	30	4	54	26	2	42	8	1	51	32	2	6	11	3	54	13	11

SURGICAL CASES : TABLE NO. 6. ABDOMINAL TUBERCULOSIS.

Age Groups.	NATURE OF DISEASE.			CONDITION ON ADMISSION.							TREATMENT		CONDITION ON DISMISSAL.				DISMISSED.					COMPLICATIONS.							
	Acute.	Sub-acute.	Chronic.	Total.	Distension.	Gland Masses.	Distension and Glands.	Distension and Fluid.	Diarrhoea.	Obstruction.	Other.	Total.	Operation.	General, including Heliotherapy.	Total.	Arrested.	Much Improved.	Improved.	Not Improved.	Total.	Fte.	Unft.	At Own or Parents' request.	For other Reasons.	Died.	Total.	Tubercular.	Other.	
- 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 2	—	2	—	2	1	—	—	—	1	—	—	2	—	2	2	1	—	—	1	—	2	1	1	—	—	—	2	—	—
- 3	—	1	1	2	—	1	—	1	—	—	—	2	—	2	2	1	—	—	—	—	1	1	—	—	1	2	—	—	
- 4	—	1	1	2	—	1	1	—	—	—	—	2	—	2	2	—	1	—	—	—	1	1	—	—	1	2	—	—	
- 5	—	1	3	4	1	—	1	1	1	—	—	4	—	4	4	1	1	—	—	2	2	—	—	—	2	4	—	1	
- 10	2	3	12	17	5	4	3	1	3	1	—	17	2	15	17	6	3	1	3	13	4	—	5	4	4	17	3	7	
- 15	—	2	10	12	3	2	1	—	4	—	2	12	—	12	12	5	6	—	—	11	6	—	—	5	1	12	2	2	
- 20	—	2	5	7	1	4	—	1	1	—	—	7	1	6	7	1	1	2	1	5	2	—	1	2	2	7	3	—	
- 25	—	1	1	2	—	1	1	—	—	—	—	2	—	2	2	—	1	—	—	1	—	—	—	1	1	2	—	1	
- 35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 45	—	—	1	1	1	—	—	—	—	—	—	1	—	1	1	—	—	1	—	1	—	—	1	—	—	1	—	1	
45+	—	—	1	1	—	1	—	—	—	—	—	1	—	1	1	—	1	—	—	1	1	—	—	—	—	1	—	—	
Total	2	13	35	50	12	14	7	4	10	1	2	50	3	47	50	15	14	4	5	38	18	1	7	12	12	50	8	12	



Age Groups.	SITE OF PRINCIPAL LESION.						CONDITION ON ADMISSION.					TREATMENT.				CONDITION ON DISMISSAL.			DISMISSED.				COMPLICATIONS.										
	Glands.	Spine.	Other Bones.	Hip Joints.	Other Joints.	Abdomen.	Total.	Sinus.	Abscess.	Sinus and Abscess.	Ulceration.	No Sinus, Abscess or Ulcer.	Total.	Operation.	Aspiration and Injection.	Appliances.	Other.	Total.	Healed, including Arrested.	Improved.	Not Improved.	Total.			Fit.	Unfit.	At Own or Parents' request.	For other Reasons.	Died.	Total.	Tubercular.	Other.	
- 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 2	—	—	1	—	—	1	2	—	—	1	—	1	2	—	—	—	—	2	—	1	—	—	1	2	1	—	—	1	—	1	1	1	—
- 3	—	—	1	—	1	—	2	2	—	—	—	—	2	—	—	—	—	2	—	1	1	1	2	1	—	—	—	—	1	1	1	2	
- 4	—	1	1	—	1	—	3	1	—	—	—	2	3	—	1	2	—	—	—	3	—	—	3	2	—	—	1	—	—	3	1	2	
- 5	—	1	—	—	1	—	2	1	1	—	—	—	2	—	1	1	—	—	2	—	1	1	1	2	—	—	—	1	2	2	2	—	
-10	2	—	1	2	—	—	5	1	—	1	—	3	5	—	2	2	2	1	5	1	—	2	3	1	—	2	—	2	5	5	5	—	
-15	—	4	1	1	1	—	7	2	2	2	—	1	7	—	2	3	2	2	7	3	2	—	5	5	—	—	—	2	7	7	7	—	
-20	—	2	2	1	2	—	7	2	2	2	—	1	7	—	3	2	2	2	7	2	—	1	3	2	1	—	—	4	7	6	1	—	
-25	—	—	—	—	—	1	1	—	—	—	—	1	1	—	—	—	1	1	1	—	—	—	—	—	—	—	1	1	1	1	—	—	
-35	—	2	—	—	1	2	5	1	2	—	—	2	5	—	2	—	—	3	5	1	1	3	5	2	3	—	—	—	5	4	1	—	
-45	—	2	—	—	—	—	2	—	—	1	—	1	2	—	1	1	—	—	2	—	1	1	1	—	—	—	1	2	1	1	—	—	
45+	—	—	—	—	1	1	2	—	1	—	—	1	2	—	1	—	1	1	2	—	1	1	2	1	1	—	—	—	2	2	2	—	
Total	2	12	7	4	8	5	38	10	8	7	—	13	38	—	13	11	14	38	12	6	8	26	16	5	4	1	12	38	31	7	—	—	

SURGICAL CASES: TABLE No. 8. GENITO-URINARY and MISCELLANEOUS.

Age Groups.	LOCALISATION OF DISEASE.			Total.	TREATMENT.			Total.	CONDITION ON DISMISSAL.			Total.	DISMISSED.					COMPLICATIONS.		
	Genito-Urinary.	Skin.	Ear.		Operation.	Tuberculin.	General.		Total.	Arrested.	Improved.		Not Improved.	Fit.	Unfit.	At Own or Parents' request.	For other Reasons.			Died.
- 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- 4	1	—	—	1	1	—	—	1	1	—	—	1	1	—	—	—	—	1	—	1
- 5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-10	1	—	—	1	1	—	—	1	1	—	—	1	1	—	—	—	—	1	—	—
-15	1	1	—	2	—	—	2	2	1	—	1	2	1	—	1	—	—	2	1	—
-20	2	1	—	3	3	—	—	3	3	—	—	3	3	—	—	—	—	3	—	1
-25	1	1	—	2	—	1	1	2	—	2	—	2	1	1	—	—	—	2	—	—
-35	2	—	—	2	2	—	—	2	—	1	1	2	—	2	—	—	—	2	1	—
-45	4	—	—	4	4	—	—	4	3	1	—	4	2	—	2	—	—	4	2	1
45+	1	—	—	1	1	—	—	1	1	—	—	1	1	—	—	—	—	1	—	—
Total ...	13	3	—	16	12	1	3	16	10	4	2	16	10	3	3	—	—	16	4	3

## BELLEFIELD SANATORIUM.

One hundred and twenty-nine cases in all, admitted as suffering from Pulmonary Tuberculosis, were discharged from this Sanatorium during the year 1929, after varying periods of treatment. The completion of extensions and alterations to wards during the latter half of the year rendered available further accommodation which accounts, for the increased number of patients dealt with compared with previous years.

Of the 129 cases under consideration it will be seen from the appended tables that 41 are classified as being "early," 83 as being intermediate in type, and five as being advanced. It may be said that of the 41 early cases all showed marked improvement at the end of their period of treatment, with the exception of two, who were unfortunately unable to habituate themselves to the general routine thought necessary, and consequently were withdrawn by their parents.

A satisfactory feature was the great improvement shown in general condition by the younger members of this class; in the case of some, a more reasonable housing condition would no doubt have precluded the necessity of Sanatorium treatment.

It would appear that parents and members of the community at large are coming to realise the necessity of protracted periods of treatment for those suffering from tuberculosis, as much less difficulty is now experienced in securing the co-operation of parents and individuals. Present economic stress may, however, be a determining factor in this attitude.

Eighty-three cases, classified as intermediate in type, all showing definite and extensive evidence of the disease, were dealt with during the year. Of these, 72 were discharged, after having, in a great measure, reconstituted themselves sufficiently to be enabled to enjoy a very reasonable measure of good health, although the definite possibility of subsequent recrudescence of the disease is very considerable. In the case of ten of those of the intermediate group, five were transferred to hospital as no obvious improvement resulted from treatment, the disease being aggressively active. Five others returned home of their own volition, no improvement having taken place as result of their stay. One death took place in this group following on a severe hæmorrhage. Unfortunately, patients of this type returning to their homes are liable to be potential disseminators of the disease.

Relatively few advanced cases were dealt with throughout the year. One death took place in this group. One was transferred to hospital, the remainder returned to their homes of their own accord. The necessary expense and loss of time incurred by relatives in frequent visitation of those acutely ill rather militates against the use of this Sanatorium for the treatment of advanced pulmonary tuberculosis.

The alterations and extensions which have been in progress at this Sanatorium during the past six years have now been completed. 110 beds are now available for use and are at present fully occupied. The dining room for patients, the decoration of which is a very decided feature, meets requirements. The various offices fit in with the general scheme.

The nursing staff enjoyed a very high standard of health throughout the year generally, their satisfactory work, during the many periods of change necessitated by building and reconstruction, merit appreciation.

The poultry farm and garden successfully met the demands made upon them. Extension of the former has been embarked upon.

A. YOUNG,  
*Physician-Superintendent.*

*April, 1930.*

BELLEFIELD SANATORIUM.—TUBERCULOSIS.—TABLE SHOWING  
STAGE OF DISEASE, AGE, RESULT OF TREATMENT, &C., OF PATIENTS  
DISMISSED DURING YEAR 1929.

Age Group.	Result of Treatment.					Work or School.	Reasons for Dismissal		Result of Sputum Examination.					Complica- tions.					
	Arrested.	Much Improved.	Improved.	Not Improved.	Died.	Less than 4 Weeks.	Fit.	Unfit.	Own accord.	Other reasons.	Transferred.	Admitted +. Discharged +.	Admitted +. Discharged -.	Admitted -. Discharged -.	Admitted -. Discharged +.	No Spit.	Tubercular.	Other.	Totals.
Early Cases—																			
— 5,	—	—	1	—	—	—	1	—	—	1	—	—	—	—	—	1	1	—	1
—10,	—	—	3	—	—	—	3	—	—	3	—	—	—	—	—	3	—	—	3
—15,	—	9	6	—	—	1	15	—	3	12	—	—	—	—	1	14	—	—	15
—20,	—	5	5	1	—	2	10	1	5	6	—	—	—	2	—	9	—	—	11
—25,	—	—	5	1	—	—	6	—	2	4	—	—	—	3	—	3	—	—	6
—35,	—	2	3	—	—	—	5	—	1	4	—	—	1	1	—	3	—	—	5
Totals,	—	16	23	2	—	3	40	1	11	30	—	—	1	6	1	33	1	—	41
Intermediate Cases—																			
—15,	—	—	5	1	—	—	5	1	2	4	—	1	1	2	—	2	—	—	6
—20,	—	4	19	2	—	—	20	5	11	12	2	5	8	5	—	7	—	—	25
—25,	—	2	14	3	1	1	16	4	11	9	—	7	6	3	—	4	—	—	20
—35,	—	4	12	4	—	—	14	6	7	11	2	8	2	6	—	4	—	—	20
—45,	—	2	8	—	—	1	7	3	4	5	1	3	1	5	—	1	—	—	10
—55,	—	—	2	—	—	—	2	—	1	1	—	—	1	1	—	—	—	—	2
Totals,	—	12	60	10	1	2	64	19	36	42	5	24	19	22	—	18	—	—	83
Advanced Cases—																			
—25,	—	—	—	2	—	1	—	2	1	—	1	2	—	—	—	—	—	—	2
—35,	—	—	—	1	—	—	—	1	1	—	—	1	—	—	—	—	—	—	1
—45,	—	—	—	—	1	—	—	—	—	1	—	1	—	—	—	—	—	—	1
—55,	—	—	—	1	—	—	—	1	1	—	—	1	—	—	—	—	—	—	1
Totals,	—	—	—	4	1	1	—	4	3	1	1	5	—	—	—	—	—	—	5



BELLEFIELD SANATORIUM.—YEAR 1929.—TABLE SHOWING  
CASES DISMISSED, WITH DURATION OF RESIDENCE.

Class.		Number Dismissed.	Number of Deaths.	- 30	Duration of Residence—Days.					
					- 50	- 100	- 150	- 200	- 300	+ 300
Early, ...	...	41	—	3	1	3	17	10	5	2
Intermediate,	...	83	1	3	2	15	31	10	18	4
Advanced, ...	...	5	1	1	—	1	2	1	—	—
Totals, ...	...	129	2	7	3	19	50	21	23	6

TABLE SHOWING INCIDENCE IN AGE PERIODS.

Age Group.	Early.	Intermediate.	Advanced.	Totals.
— 5	1	—	—	1
—10	3	—	—	3
—15	15	6	—	21
—20	11	25	—	36
—25	6	20	2	28
—35	5	20	1	26
—45	—	10	1	11
—55	—	2	1	3
Totals, ...	41	83	5	129